Textile World

ESTABLISHED 1868

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Editor: DOUGLAS G. WOOLF

What the Cotton Code Means

THE code of fair competition for the cotton textile industry printed on the two pages following, demands the most careful study on the part of every individual identified with textile manufacture. In detail, it differs of course from the codes which will be adopted later by other branches of the industry. In principle, however, it represents the type of attack which is to be directed against the forces of economic degeneration, under the Industrial Recovery Act.

The most far-reaching provisions are those contained in Clauses II and III, establishing a minimum weekly wage of $12 in the South and $13 in the North; a maximum work-week of 40 hours for employees; and a maximum of two shifts of 40 hours each for productive machinery.

The next most important section is Clause VI which sets up an agency whose function will be to cooperate with the Administrator toward the effective operation of the code so that the broad purpose of the act may be achieved in this particular industry.

Clause VI comprises eight sub-items, describing the types of recommendations which the agency may present to the Administrator with this end in view. Item 1 provides for the keeping of uniform accounts. Item 2 provides for a service bureau which would enable smaller mills to participate in the code; without this provision, such mills would find the requirements of the code a serious burden, and in many cases a physical and financial impossibility.

Item 3 aims to check unwarranted machinery expansion, but in no way limits needed replacement and modernization.

Item 4 wisely provides for flexibility of the limitation on working hours of machinery in the interest of both the industry and the public.

Items 5 and 6 deal with vital trade practices and aim to check destructive competition, whether of the monopolistic or chiseling type. Reporting of prices is permissive under Item 5.

Item 7 provides for the development of specific types of information to be made available to suppliers of credit to those engaged in the industry.

Item 8 is particularly important in that it provides for dealing with inequalities which "may otherwise arise to endanger the stability of the industry and of production and employment."

Now, what attitude should the average manufacturer adopt toward this code and its implications?

First, it is most important—in our opinion—that the code be regarded as an experimental document. We are confident that no member of the committee or no member of the administrative staff would advance it as a finished job. No man, or no group of men, could produce in a few weeks a completely satisfactory program for a great industry. As time goes on, the code can be moulded to fit the needs of conditions as they arise. There is ample flexibility provided for this purpose.

Second, it is of course evident that costs will be increased sharply. Initial adjustment to this change involves difficulties. But this basic thought should be kept in mind: For years, textile leaders have expressed the conviction that the industry could not make real progress until its wage-level was higher, and have asserted that the consuming public would be perfectly willing to pay a price for its apparel which would represent a fair profit to manufacturers and a fair wage to employees. The code, in conjunction with the act, gives us an opportunity to test this apparently sound argument. Certainly, we do not believe any right-thinking employer will resent a set of conditions which would prevent the paying of less than $12 per week to an employee.

Third, the inequalities which inevitably will arise should not be anticipated as sufficient grounds on which to resist the program itself. Such an attitude could defeat the soundest and most progressive movement. Inequalities will be adjusted; none can be as dangerous as the situation of the last few years.

Fourth, failure to provide for "price-fixing" in the code is an argument for, not against, the program. Price-fixing has never fixed anything except prices.

Finally, the average manufacturer—after he has taken steps to participate in the operation of the code—can and should go back to his own business. He will still have his job of running his plant efficiently, keeping his equipment up-to-date, selling his product wisely, and developing his personnel relationships on a sound basis.

No one expects him to commute to Washington. The only change that will have been made, under the proper administration of the code, should be the creation of chance for a profit on those operations.

The Cotton Code . . .

TEXT OF PROVISIONS SET UP UNDER RECOVERY ACT

TEXT of the code of fair competition for the cotton textile industry, as revised and presented to the Administrator of the National Industrial Recovery Act and signed by President Roosevelt on July 9, is printed below. It is effective beginning July 17. In approving the code, the President commended the cotton industry as "the leader of a new thing in economics and government." He added, "That took faith and courage and patriotism of the highest order."

The code follows in full:

To effectuate the policy of Title I of the National Industrial Recovery Act, during the period of the emergency, by reducing and relieving unemployment, improving the standards of labor, eliminating competitive practices destructive of the interests of the public, employees and employers, relieving the disastrous effects of over-capacity and otherwise rehabilitating the cotton textile industry and by increasing the consumption of industrial and agricultural products by increasing purchasing power, and in other respects, the following provisions are established as a code of fair competition for the cotton textile industry:

I. Definitions: The term "cotton textile industry" as used herein is defined to mean the manufacture of cotton yarn and/or cotton woven fabrics, whether as a final process or as a part of a larger or further process. The term "employees" as used herein shall include all persons employed in the conduct of such operations.

The term "productive machinery" as used herein is defined to mean spinning spindles and/or looms. The term "effective date" as used herein is defined to be July 17, 1933, or if this code shall not have been approved by the President two weeks prior thereto, then the second Monday after such approval. The term "persons" shall include natural persons, partnerships, associations and corporations.

II. On and after the effective date, the minimum wage that shall be paid by employers in the cotton textile industry to any of their employees—except learners during a six weeks' apprenticeship, cleaners and outside employees—shall be at the rate of $12 per week when employed in the Southern section of the industry and at the rate of $13 per week when employed in the Northern section for forty hours of labor.

III. On and after the effective date, employers in the cotton textile industry shall not operate on a schedule of hours of labor for their employees—except repair shop crews, engineers, electricians, firemen, office and supervisory staff, shipping, watching and outside crews and cleaners—in excess of forty hours per week, and they shall not operate productive machinery in the cotton textile industry for more than two shifts of forty hours each per week.

IV. On and after the effective date, employers in the cotton textile industry shall not employ any minor under the age of 16 years.

V. With a view to keeping the President informed as to the observance or non-observance of this code of fair competition, and as to whether the cotton textile industry is taking appropriate steps to effectuate the declared policy of the National Industrial Recovery Act, each person engaged in the cotton textile industry will furnish duly certified reports in substance as follows and in such form as may hereafter be provided:

(a) Wages and Hours of Labor. Returns every four weeks showing actual hours worked by the various occupational groups of employees and minimum weekly rates of wages.

(b) Machinery Data. In the case of mills having no looms, returns should be made every four weeks showing the number of spinning spindles in place, the number of spinning spindles actually operating each week, the number of shifts and the total number of spindle hours each week.

In the case of mills having no spinning spindles, returns every four weeks showing the number of looms in place, the number of looms actually operated each week, the number of shifts and the total number of loom hours each week.

In the case of mills that have spinning spindles and looms, returns every four weeks showing the number of spinning spindles and looms in place; the number of spinning spindles and looms actually operated each week, the number of shifts and the total number of spindle hours and loom hours each week.

(c) Reports of production, stocks and orders. Weekly returns showing production in terms of the commonly used unit, i.e. linear yards, or pounds or pieces; stocks on hand both sold and unsold stated in the same terms, and unfilled orders stated also in the same terms. These returns are to be confined to staple constructions and broad divisions of cotton textiles.

The Cotton-Textile Institute, Inc., 320 Broadway, New York City, is constituted the agency to collect and receive such reports.

VI. To further effectuate the policies of the Act, the Cotton Textile Industry Committee, the applicants herein, or such successor committee or committees as may hereafter be constituted by the action of the Cotton-Textile Institute, the American Cotton Manufacturers Association and the National Association of Cotton Manufacturers, is set up to cooperate with the Administrator as a planning and fair practice agency for the cotton textile industry.

Such agency may from time to time present to the Administrator recommendations based on conditions in the industry as they may develop from time to time which will tend to effectuate the operation of the provisions of this code and the policy of the National Industry Recovery Act, and in particular along the following lines:

1. Recommendations as to the requirements by the Administrator of such further reports from persons engaged in the cotton textile industry of statistical information and keeping of uniform accounts as may be required to secure the proper observance of the code and promote the proper balancing of production and consumption and the stabilization of the industry and employment.

2. Recommendations for the setting up of a service bureau for engineering, accounting, credit, and other purposes to aid the smaller mills in meeting the conditions of the emergency and the requirements of this code.

3. Recommendations (1) for the requirement by the Administrator of registration by persons engaged in the cotton textile industry of their productive machinery, (2) for the requirement by the Administrator that prior to the installation of additional productive machinery by persons engaged or engaging in the cotton textile industry, except for the replacement of a similar number of existing looms or spindles or to bring the operation of existing productive machinery into balance, such persons shall secure certificates that such installation will be consistent with effectuating the policy of the National Industrial Recovery Act during the period of the emergency, and (3) for the granting or withholding by the Administrator of such certificates if so required by him.

4. Recommendations for changes in, or exemptions from the provisions of this code as to the working hours of machinery which will tend to preserve a balance of productive activity with consumption requirements, so that the interests of the industry and the public may be properly served.

5. Recommendations for the making of requirements by the Administrator as to practices by persons engaged in the cotton textile industry as to methods and conditions of trading, the naming and reporting of prices which may be appropriate to avoid discrimination, to promote the stabilization of the industry, to prevent and eliminate unfair and destructive competitive prices and practices.

6. Recommendations for regulating the disposal of distress merchandise in a way to secure the protection of the owners and to promote sound and stable conditions in the industry.

7. Recommendations as to the making available to the suppliers of credit to those engaged in the industry of information regarding terms of, and actual functioning of any or all of the provisions of the code, the conditions of the industry and regarding the operations of any and all of the members of the industry covered by such code to the end that during the period of emergency available credit may be adapted to the needs of such industry considered as a whole and to the needs of small as well as large units.

8. Recommendations for dealing with any inequalities that may otherwise arise to endanger the stability of the industry and of production and employment.

Such recommendations, when approved by the Administrator, shall have the same force and effect as any other provisions of this code.

Such agency is also set up to cooperate with the Administrator in making investigations as to the functioning and observance of any of the provisions of this code, at its own instance or on complaint by any person affected, and to report the same to the Administrator.

Such agency is also set up for the purpose of investigating and informing the Administrator on behalf of the cotton textile industry as to the importation of competitive articles into the United States in substantial quantities or increasing ratio to domestic production on such terms or under such conditions as to render ineffective or seriously to endanger the maintenance of this code and as an agency for making complaint to the President on behalf of the cotton textile industry, under the provisions of the National Industrial Recovery Act, with respect thereto.

VII. Where the costs of executing contracts entered into in the cotton textile industry prior to the presentation to Congress of the National Industrial Recovery Act are increased by the application of the provisions of that Act to the industry, it is equitable and promotive of the purposes of the Act that appropriate adjustments of such contracts to reflect such increased costs be arrived at by arbitral proceedings or otherwise, and the Cotton Textile Industry Committee, the applicant for this code, is constituted an agency to assist in effecting such adjustments.

VIII. Employers in the cotton textile industry shall comply with the requirements of the National Industrial Recovery Act as follows:

"(1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing, and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

IX. This code and all the provision thereof are expressly made subject to the right of the President, in accordance with the provision of Clause 10 (b) of the National Industrial Recovery Act, from time to time to cancel or modify any order, approval, license, rule or regulation, issued under Title I of said Act, and specifically to the right of the President to cancel or modify his approval of this code or any conditions imposed by him upon his approval thereof.

X. Such of the provisions of this code as are not required to be included therein by the National Industrial Recovery Act may with the approval of the President, be modified or eliminated as changes in circumstances or experience may indicate.

It is contemplated that from time to time supplementary provisions to this code or additional codes will be submitted for the approval of the President to prevent unfair competition in price and other unfair and destructive competitive practices and to effectuate the other purposes and policies of Title I of the National Industrial Recovery Act consistent with the provisions hereof.

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Conditions Added to Code by President Roosevelt

WHEN the President signed the cotton textile code, he stated that it was subject to interpretations and conditions which are summarized below:

1. Limitations on machinery operation shall not apply to tire yarns or fabrics for three weeks from date.

2. Industry's planning committee is to take up question of employee purchase of homes in mill villages and to submit by Jan. 1, 1934, a plan for employee home-ownership.

3. Approval of the code's minimum wages is not to be regarded as approval of their economic sufficiency, and the subject may be reopened to consider increase.

4. Office employees are to be included in the benefits of the code.

5. Existing amounts by which wages in the higher paid classes (up to $30 weekly), exceed wages in the lowest paid classes, shall be maintained.

6. Although excepted from maximum hour provisions, repair shop crews, engineers, electricians, and watchmen will be paid time-and-one-half for overtime.

7. Exception of cleaners and outside workers from the code is on condition that planning committee submit by Jan. 1, 1934, minimum wages and maximum hours for these workers.

8. Hours prescribed are maximum for every employee covered and such employee is not permitted to work for one or more employers to aggregate exceeding those hours in a single week.

9. The minimum wage prescribes a minimum rate of pay per hour regardless whether the compensation is on time rate or piece work.

10. Until there are further provisions in the code regarding number of machines per employee, it is required that any increases in amount of work required over that required on July 1, 1933, be submitted and approved by the agency created in Section 6 of the code and by the Administration.

11. Opportunity will be given for consideration of every application of the code to any person who has not personally or by a representative consented to its terms. Pending such hearing before the Administrator or his representative, he may be granted a stay of any provision of the code without incurring liability.

12. President's approval is for a four months' period subject to request for renewal for four months and with the right for modification at any time.

13. Approval of Section 6 is on condition that the Administration name three members of the industry's planning and supervisory committee. Such members may not vote, but will have all other rights of committee members.

Cotton Code Hearings

SERVE AS CLINIC FOR ALL INDUSTRY

Special insert, including pictorial presentation of personnel involved in administration of National Industry Recovery Act, starts on page 87. Status of programs of various branches of the industry will be found in the respective "Digest" sections.

THE spot-light, in addition to innumerable flash-lights, was focussed upon the cotton-textile industry last month. The hearings held at Washington, June 27-29, on the code submitted by this group for operation under the National Industrial Recovery Act, acquired significance far beyond any which might be attached to the actual effect of any one code upon economic conditions.

As the first industry to submit a program, discussion of it became a clinic for all industry. Within those three days, what had been merely a shadowy idea, composed mostly of question-marks, became a thing of substance. Rules of procedure were crystallized. The major intent of the administrators of the act became definitely known. Scope and limitation of argument were outlined. After weeks of conjecture and rumor, the whole proposition suddenly reached what General Hugh S. Johnson aptly called the "gold-fish bowl" stage.

It is no wonder, then, that manufacturer and association executives from scores of other industries followed the proceedings every bit as intently as did textile men.

The scene was as dramatic as was the event itself. At the center of the huge "partnership table" on the dais of the Commerce Building auditorium sat General Johnson, the administrator. At one end was W. L. Allen, the deputy-administrator who conducted the hearings on this code. At the other end, sat or stood the various witnesses in turn. Back of the General, on the dais, were three advisory groups, representing industry, labor—and, of all things, the consumer! Men and women whose names make front-page news were included in these groups. In the hall sat hundreds of perspiring industrialists, flanked by the press.

In keeping with this setting were General Johnson's first words: "Ladies and gentlemen, you are about to be witnesses of what may prove one of the most momentous meetings of this kind that has ever been held anywhere." And the ladies and gentlemen seemed to recognize that fact.

Major Points at Issue

From the textile standpoint, the outstanding aspect of the hearings was the unanimous approval of the principles underlying the cotton code. Witnesses made no attempt toward excursions into academic discussion of the premise. They seemed in agreement that, in essence, the code represented an honest attempt to apply the new law equitably to all engaged in this particular industry.

Naturally, this unanimity did not extend to the details of the code. No one expected that it would. It would be a fanatic, indeed, who would expect the "partnership table" to eliminate divergence of interests among the various groups.

The main points at issue during the hearing were:

1. Representatives of labor insisted upon a shorter work-week than the 40-hour maximum prescribed in the code. President William Green of the A. F. of L. argued for a 30-hour week, with 32 hours the top limit. Thomas McMahon, president of the United Textile Workers, urged no more than a 35-hour week.

2. From the same source, came disagreement of the minimum wage of $10 per week for northern mills and $11 per week for southern mills, as specified in the code. Mr. Green suggested a minimum of from $14 to $16. Mr. McMahon urged $14, with no differential between North and South. William E. G. Batty, secretary of the New Bedford Textile Council, recommended a sliding scale: $14.40 for unskilled workers; $18 for semi-skilled; $22.50 for skilled, and $30 for highly skilled.

3. Representatives of specialized industries requested, variously, exemption from the code or removal of the limitation of two 40-hour shifts on operation of equipment.

4. Senator Byrnes, of South Carolina, urged restrictions on use of the "stretch-out" system. A committee was immediately appointed by General Johnson to study this problem.

5. The child-labor issue, injected into the discussion the first day of the hearing, soon became no issue at all. On the second day, the cotton industry committee reported its willingness and desire to add a clause prohibiting the employment of minors under 16 years of age. This announcement, of course, furnished most of the head-lines in the daily press, although cotton manufacturers themselves know how little effect it will have upon the industry as it is already only a small factor. Psychologically, it was the high point of the hearings.

6. Henry P. Kendall, president of the Kendall Co., urged the inclusion of a clause prohibiting the night employment of women and minors.

7. There was much discussion as to what should be included in "productive machinery," several witnesses insisting that cards and other preparatory equipment be included in the provision limiting operation of such machinery to two 40-hour shifts.

Other issues arose, but the above were the principal points of controversy.

Presentation of the Code

IN LINE with the rules of procedure, as outlined by Donald Richberg, chief of the legal division of the National Industrial Recovery Administration, the code was first presented and explained by members of the cotton industry committee.

George A. Sloan, president of the Cotton-Textile Institute, read the code in its entirety. He then outlined briefly the manner in which the committee was formed and the code drafted.

Mr. Sloan emphasized four fundamental facts: (1) This is a highly competitive industry with a vast number of units—some of them very small and none of them very large, compared with the extent of the industry as a whole. (2) Communities are often practically dependent on the operation of the mills located therein. (3) There is a high investment cost in the industry as compared with the value of the annual product. (4) There is a great overcapacity in the mechanical equip-

General Hugh Johnson, administrator of recovery act, opening the hearings on the cotton code. On the left is Donald Richberg, general counsel

ment of the cotton industry as compared with consumption.

High-lighting the disastrous effects of these facts upon the progress of the industry during recent years, and the attempts made cooperatively to off-set them, Mr. Sloan concluded that "we conceive the basic problem in the rehabilitation of the industry to be to check the destructive effects of over-capacity, to spread employment, and to increase the purchasing power of employees."

The code, he said, attacks this problem in this way: (1) It provides for a work-week for employees of not more than 40 hours accompanied by a minimum wage. 2. It confines the operation of productive machinery to two shifts of 40 hours each.

He dwelt upon the fact that small one-shift mills, usually in remote localities, have found the burden particularly heavy, and are not in a position to go to two shifts by adding to their housing facilities. Consequently, he stated, it was necessary to limit the operation of machinery in larger centers to two shifts if these smaller mills were to survive. This was in anticipation of the claim, made in some quarters, that hours of labor per employee should be limited but that there should be no restriction on operation of equipment.

"The provision for a maximum 40-hour week for labor and 80 hours for machine operations, with uniform application to all and special favors to none, is the keynote of the structure we present," he concluded.

Amory Speaks for Northern Mills

Speaking for the National Association of Cotton Manufacturers, Robert Amory, of the Nashua (N. H.) Mfg. Co., expressed the belief that the schedule provided in the proposed code would permit the needs of the country to be taken care of without any shortage which might cause unreasonably high prices.

" We believe that this layout will not only reabsorb or absorb all the cotton mill workers who have been employed in part," he said, "but will also absorb a great many thousands who have never been employed by the industry at all. I believe very strongly that three shifts, which means running the third shift all night, is an anti-social practice and should not be employed in those industries which do not have continuous processing necessitating the so-called graveyard shift. I think it should be stopped, and that is another reason for asking for two 40-hour shifts."

Turning to the minimum wage, he stated that the rates proposed in the code represent an increase in hourly rates and in labor cost of 20 to 35% at least, even where the weekly pay-envelopes in the best paid mills remain unchanged.

Mr. Amory dwelt upon the "wage equivalents" paid by many mills, particularly in the South, in the form of only nominal rent for houses, and various village activities. "I believe this practice discourages home-ownership and there is too great a tendency toward paternalism in it," he said, "and while it is necessary at the present time, I hope in the future that those mills which have villages will find it better to charge proper standard rents in the community, so that the worker may have the choice of home ownership.

"The industry committee having discussed all these phases," he stated, "agreed in their best judgment on a minimum of $10 South and $11 North. This differential was conceded by the North in view of the practice of furnishing housing in the South at much less than cost. . . .

"In agreeing to propose these minimum wages, great credit should be given to those broad-minded mill managers of the South who foresaw the great benefits to come to all mill-workers under this act, and who were willing to give up their present advantageous low-cost position."

Mr. Amory concluded by expressing the belief that, under the proposed code, the cotton-textile industry would play its part in national industrial recovery.

During the questioning which followed, Mr. Amory stated that he had heard two schedules suggested: (1) Seven hours, five days a week and five hours on Saturday for the first shift, and five eight-hour shifts for the second, which would permit of a half-hour in the middle of the shift for lunch and rest; (2) Two eight-hour shifts, employees to eat at the job without sitting down. He prefers the former, but believes it should be left to the workers to decide which they prefer.

It Was Said at the Hearings:

✦ **"We have presented here from a great industry, with practical unanimity, a suggestion of a method whereby management in that industry, and labor in that industry have joined hands in cooperation to pull this country out of the difficulties in which we have been for the last three years, to the extent that that entire, relatively small niche can do that."—*General Johnson.***

✦ **"I should like to say in connection with this first hearing that the spirit of partnership and cooperation has been displayed to the utmost by the cotton textile group."—*Deputy Administrator Allen.***

✦ **"The industry generally has welcomed the opportunity to take the constructive steps in this emergency which are made possible by the National Industry Recovery Act."—*George A. Sloan.***

✦ **"The National Industry Recovery Act gives opportunity to the textile industry to put its house in order and its house thoroughly needs to be put in order."—*Robert Amory.***

✦ **"Our committee is on record that every spinner in the United States should be treated alike, should be given a dose out of the same bottle."—*W. D. Anderson.***

Anderson Speaks for Southern Mills

Appearing on behalf of the American Cotton Manufacturers Association, W. D. Anderson, of the Bibb Mfg. Co., Macon, Ga., presented statistics to show that, if, as the result of national recovery, per capita consumption of cotton goods should get back to a level approximately that of 1926 and 1927, the schedule of two shifts of 40 hours each—which means, in the committee's opinion, an *average* run of 60 hours a week for the entire industry—would be insufficient to meet the demand. That was the basis, he said, on which the proposed schedule was requested.

Turning specifically to the problems of the southern division of the industry, Mr. Anderson reviewed the background of industrial relations in that section.

"It will not be practicable in dealing with the present situation," he said, "to take the textile workers of our section and pull them up by their roots. There is no friendly soil nearby to which they can be transplanted. Moreover, their uprooting

CHILD LABOR

To T. M. Marchant went, deservedly, the honor of announcing the decision of the committee on the question of child labor. "Mr. Chairman," he said, "this is a time that brings a good deal of happiness to me. For many years, serving the textile industry, I have been interested in something we are now considering most seriously. Our cotton textile industry believes that it would be most helpful to the broad movement, if the administrator is agreeable, to put an express provision in the cotton textile code that the employment of minors under 16 years of age be not permitted during the emergency."

"The suggested inclusion in the code," said General Johnson, "is one of the most significant developments of this hearing. . . . I add my congratulations to those of the deputy administrator."

will seriously disturb the lives and fortunes of the farmers and the urban population hard by which depends upon the farmer and his activities."

Mr. Anderson discussed at length the situation with regard to southern mill villages. "The mill village exists and must be dealt with in considering this matter. If it be an evil, it is a necessary evil and is, in any event, a stubborn fact."

He presented detailed figures showing the cost of maintaining the villages and related activities. In one instance, he estimated the saving per employee at $2.16 per week "which is given to them over and above what it would cost them if we did not maintain this village."

He disagreed in a friendly way with Mr. Amory's opinion that eventually the villages could be put on a self-sustaining basis and the differential between minimum wages North and South eliminated.

"Well, if there comes a time when the village is eliminated absolutely in the South, and all the facilities which southern mills give their employees are washed out, and we are all put on a common level, yes," he said. "I would follow him there. But that will come, I believe, with the dawn of the millennium, not during the life of this bill, if this bill under which we are operating lasts only two years. I think therefore that the one-dollar difference is moderate. I think it ought to be greater, but as my friend Mr. Amory said, we sat down and discussed this thing in a friendly spirit, and we finally decided to recommend a difference of one dollar, and we are all content with it."

The speaker described the various village facilities and social features in detail. He also disputed the basis on which the wage level in cotton mills is so often criticized. Admitting that this is a low-wage industry, he claimed nevertheless that comparison is made, unfairly, with rates of pay for more skilled operations in other branches of industry and commerce. Finally, he presented figures to show that the child-labor problem in cotton mills was no longer a problem at all.

Testimony on Clause I: Definitions

AT THE conclusion of the presentation and explanation of the code by these three members of the committe, individual clauses were taken up, and witnesses heard.

Mr. Sloan re-read *Clause I: Definitions*, the text of which follows:

"The term 'cotton textile industry' as used herein is defined to mean the manufacture of cotton yarns and/or cotton woven fabrics, whether as a final process or as a part of a large or further process. The term 'employees' as used therein shall include all persons employed in the conduct of such operations. The term 'productive machinery' as used herein is defined to mean spinning spindles and/or looms. The term 'effective date' as used herein is defined to be July 17, 1933, or, if this code shall not have been approved by the President two weeks prior thereto, then the second Monday after such approval. The term 'persons' shall include natural persons, partnerships, associations and corporations."

The first witness heard on this clause was C. A. Stillman, vice-president of the Goodyear Tire and Rubber Co., representing that company as well as the U. S. Rubber Co., Firestone Tire & Rubber Co., and B. F. Goodrich Co.

Pointing out that each of these tire companies owns and operates textile mills engaged solely in the production of tire fabric for use in the manufacture of its own tires, Mr. Stillman argued that these mills should not be subject to the provisions of the code; and that, even if it were decided that they should be, they urged strenuously that no restriction be placed upon number of hours per week that production machinery in the tire-fabric industry may be operated.

He supported this contention on the grounds that such restrictions would destroy the balance of the integrated tire-manufacturing operations of these companies; would force them to go into the open market for a much larger part of their tire-fabric requirements than heretofore; would throw both textile and tire workers in these companies out of work; and would artificially increase the cost of tires to the consumer.

An entirely different argument was presented by F. A. Seiberling, who appeared for a group of nine tire manufacturers who do not make their own tire fabric. Exemption of the "big four" from the provisions of the code, he said, would place the smaller non-integrated tire manufacturers at a serious disadvantage. If the independent fabric mills, from which his group purchased its requirements, were permitted to operate only 80 hours per week, and the mills of the four integrated companies allowed to operate 144 hours, he argued, the difference in cost between running an 80-hour mill against 144-hour mill (approximately 6c. per lb.) would mean that his group would have an extra cost of 25c. per tire.

Speaking for the National Upholstery and Drapery Textile Association, Sylvan Gotshal pointed out that the mills in that group operate looms on a wide variety of fibers; that the number of looms operated per weaver is far smaller than that practiced in the cotton industry generally; and that, therefore, these manufacturers felt they should not be included in the cotton code but should be permitted to formulate a code of their own.

E. J. McMillan, president of the American Knitwear Manufacturers Association, urged that the effective date of the code be postponed—and suggested the middle of August as the date. While realizing that those of his members who operate spinning mills will come under the cotton code to that extent, he pointed out that his group is preparing a code of its own, and that serious harm would develop if the cotton code became effective before that of his association.

Testimony on Clauses II and III: Wages and Hours

AND THEN came the really serious business of the hearings; discussion of Clauses II and III, covering wages and hours. It was considered necessary to deal with these jointly. These clauses follow:

II. On and after the effective date, the minimum wage that shall be paid by employers in the cotton textile industry to any of their employees—except learners during a six-weeks' apprenticeship, cleaners and outside employees—shall be at the rate of $10 per week when employed in the southern section of the industry and at the rate of $11 per week when employed in the northern section, for 40 hours of labor.

"III. On and after the effective date, employers in the cotton textile industry shall not operate on a schedule of hours for their employees—except repair shop crews, engineers, electricians, firemen, office and supervisory staff, shipping, watching and outside crews, and cleaners—in excess of 40 hours per week and they shall not operate productive machinery in the cotton textile industry for more than two shifts of 40 hours each week."

Appearing as the first witness in connection with these two clauses, F. C. Dumaine, of the Amoskeag Mfg. Co., expressed

himself as in accord with the principles underlying the code, but differing on these details: (1) He favored one shift of 48 hours. (2) He protested against the differential between northern and southern wages. (3) He urged rigid control of machinery output and expansion.

Russell E. Watson, of Johnson & Johnson, urged, first, that the proposed minimum wage was too low and suggested $14 and $15 instead of $10 and $11; and, second, that there should be no limitation on the number of shifts, although acquiescing in any length of shift which might be decided upon. He based the latter contention on the fact that such limitation would throw out of employment nearly 500 workers in the company's fabric mills; that Johnson & Johnson would not be able to purchase goods, to meet its specifications, in the open market; that such action would work a hardship upon the consumer; and that it would merely pass work on to inefficient mills. "The corporation management which can make goods efficiently at the low hours and high wages prescribed by the administration, should not be penalized," he said. On this point, General Johnson said that, if this line of reasoning were carried to its logical conclusion, we would put all business in the hands of the most efficient companies and crowd out the less efficient. This would mean less employment, he said. In the long run, he agreed, such a policy might be the right one, but in an emergency, there are other factors to be considered.

Henry P. Kendall, of the Kendall Co., suggested that cleaners and outside employees be omitted from the exceptions in Clauses II and III. His principal contention, however, was that night employment of women and minors be prohibited under the code. He recalled that the industry had tried to make such prohibition effective but that a minority had interfered. He urged that this matter be settled for all time. Otherwise, he expressed himself as heartily in favor of the general principles of the code, and congratulated the committee for having produced it.

Labor Presents Its Case

Under the order of procedure, the viewpoint of labor was next presented.

Thomas McMahon, president of the United Textile Workers of America, who had acted as labor advisor to the administration during the preliminary consideration of this code, recommended that the minimum wage for all unskilled employees be $14; that employment of persons under 16 years of age be prohibited; that two shifts of 35 hours each be the maximum; and that cards and other auxiliary equipment be included in the two-shift limitation.

A tense incident developed at the conclusion of Mr. McMahon's testimony. Deputy Allen, evidencing strong feeling, said: "I must confess that I am somewhat flabbergasted. Perhaps this is not the time to discuss it, but I feel it is only fair and proper to call attention to the fact that you have acted as my adviser. Today you are calling my attention to many points which you did not take up with me before." "I had no hand in making up this code," replied Mr. McMahon. "These points were not brought out in the negotiations before us." Mr. Allen accepted the explanation, and General Johnson agreed that it could not be assumed Mr. McMahon had made any commitments merely because he took part in the preliminary discussions of the code.

William E. G. Batty, secretary of the New Bedford Textile Council, and also representing the Fall River group; in the absence of James Tansay, first discussed the question whether cards and other auxiliary equipment should be included as "productive machinery" subject to two-shift limitation. He agreed that no mill is perfectly balanced and that the argument of the manufacturers on this point had some basis in fact. He expressed his willingness to leave the question to the administration, and agreed with Mr. Allen that this is an economic problem, not a labor one, since it has to do merely with the operation of machines, and not with the employment of workers.

He proposed a minimum wage scale of $14.40 for unskilled employees; $18 for semi-skilled; $22.50 for skilled; and $30 for highly skilled. He also recommended two shifts of 30 hours per week as the best basis on which to start. He urged that office and supervisory staffs were the only legitimate exceptions in the code. He urged the elimination of the employment of women and minors after 6 p.m.

Underwood & Underwood

Around the Partnership Table at the Washington hearings on the cotton code—left to right, Robert Amory, W. L. Allen and George A. Sloan.

At the conclusion of Mr. Batty's testimony, both General Johnson and Mr. Allen praised him highly for his method of presentation, and the audience applauded him vociferously.

William Green, president of the American Federation of Labor, complimented all those engaged in the development of the code, and emphasized the fact that he was appearing in a sympathetic and helpful attitude. He stated, however, that in his opinion a 40-hour week would not bring about realization of the primary purpose of the act, and urged a five-day week and a six-hour day. He also recommended a minimum wage of somewhere between $14 and $16 per week.

Others who were heard at the hearings included Sidney Hillman, president of the Amalgamated Clothing Workers; Miss Maud Younger, Chairman of the National Women's Party; John P. Davis, executive secretary of the Negro Industrial League; Lucy R. Mason, general secretary of the National Consumers League; and Miss Margaret Wieseman, executive secretary of the Consumers' League of Massachusetts.

Revised Code Presented

FOLLOWING the demonstration of the divergence of opinion between the industry and the labor groups, the committee representing the former went into practically continuous session in Washington. Out of their deliberations came a revised code, maintaining the same maximum schedule of hours but increasing the minimum wage provision from $10 and $11 to $12 and $13, for the South and North, respectively. This revised code also included the provision prohibiting employment of minors under the age of 16, and laid the groundwork for continuation of the committee as an agency to make effective the Act and the code. Details of these revisions will be found elsewhere in this issue, the code being printed in its entirety.

In answer to a question from General Johnson as to the reasons governing the increase to a higher minimum wage in the revised code, Stuart W. Cramer of Cramerton, N. C., replied for the committee in parts as follows: "Our employees who have not been vocal in this hearing are depending on us to care for their interests. We should go as far as we safely can in contributing our part of the purchasing power necessary to sustain the present situation and what we hope will develop later. As the result of further statistical study, and having in mind that the buying power of the people in this country must be increased, we have therefore reached the conclusion as announced by Mr. Sloan."

General Johnson commented: "I want to say that my reaction is that you have done a very, very remarkable thing. You have shown a remarkable spirit of cooperation, a patriotic spirit, which seems to me to be above reproach . . . I cannot think of any group in this country more to be congratulated for their spirit than you. . . .

CHART I—Production rate for textiles as indicated in consumption of raw fibers. Monthly totals of cotton, wool, rayon and silk in pounds are basis of the curve.

Textiles Climb Back . . .

PRODUCTION AND PRICES START UP AGAIN

PROBABLY nowhere in American industry has the "new deal" meant more than in textiles.

Shortly after the fateful day in early March, when finance and business in this country practically stood still, textile manufacture started to climb up from the depths. The results are shown graphically on this page.

Production, gaged by consumption of raw materials, has gone up by leaps and bounds. Chart I presents the picture. The height reached in May of this year does not find a historical equal unless we go back to 1929.

Prices have followed the same trend. Chart II shows TEXTILE WORLD'S index numbers for raw cotton and raw wool. The former is now higher than at any time since 1931; the latter must be traced back to 1930 to finds its par.

Yarns and fabrics have appreciated in price even more rapidly, so that there is now a chance for a fair profit in manufacturing margins.

Ever since this upward movement started, there has been much discussion about the extent to which speculation has played a part. That discussion cannot be ended here. There is no known statistical method for the evaluation of the speculative factor. Undoubtedly, anticipation of higher prices for raw materials and for finished goods, as the result of the operation of the agricultural and industrial legislation, has been the prime-mover. Without that anticipation, there would have been no such upward shoots as shown in the charts.

However, now that the movement has started, latent consumer demand for textiles has manifested itself. This demand, naturally, has not kept pace with increased production in manufacturing circles, but it has been sufficient to reflect a consuming power which can absorb the available supply.

The future is in the hands of industry plus General Johnson. Until a little clearer knowledge of that future is available, restraint in production and price policies would seem advisable.

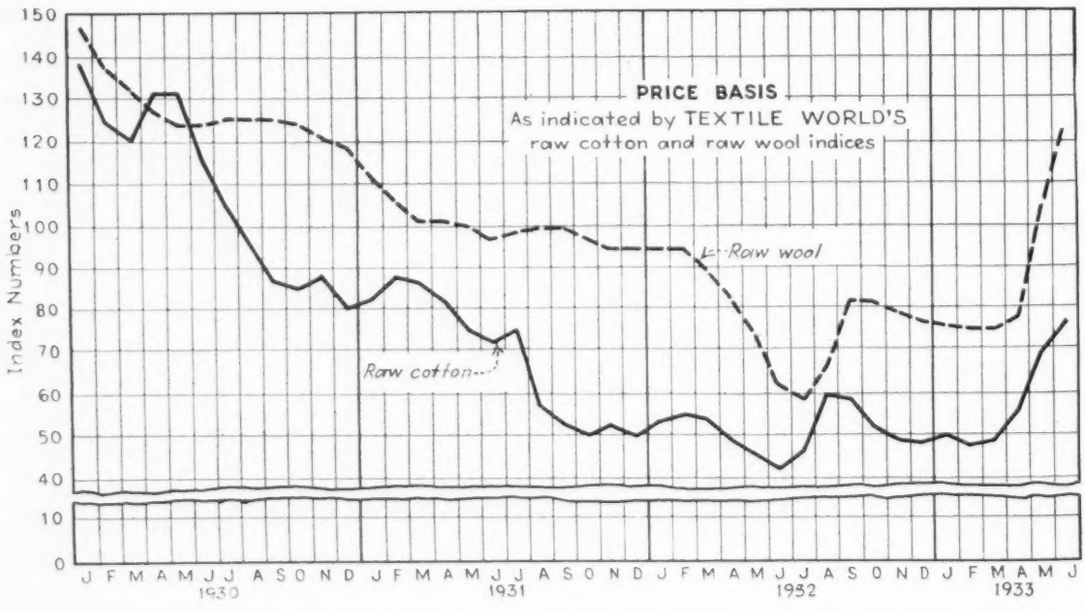


CHART II—Price basis for textiles as shown by price fluctuation of raw cotton and raw wool. TEXTILE WORLD'S index numbers (1914 = 100) are used so that curves might be charted on same scale and parities between the two fibers observed.

New Mill Construction

IN FIRST HALF OF 1933 EXCEEDS $3,000,000

Recent addition to Tennessee-Eastman plant

THE volume of new textile mill construction, despite the retarding effect early in the year of the banking holiday and other disturbing factors, held up surprisingly well during the first half of 1933. There were comparatively few large projects, except rayon plant additions, but many small building extensions and miscellaneous jobs swelled the total to substantial proportions. Mill construction in all branches of the industry as reported to TEXTILE WORLD during the first half of the year reached an aggregate of more than $3,000,000, not including expenditures for equipment.

The capital outlay for construction projects in the various divisions of the industry may be summarized, as follows:

Cotton Mills	$1,370,000
Rayon (Yarn and Weaving)	915,000
Knitting Mills	511,500
Woolen and Worsted Mills	300,000
Processing Plants	230,000
Silk Mills	57,000
Total	$3,383,500

North Carolina, with $1,011,000, and South Carolina, with $573,500, led the other States in expenditures for new textile mill construction. The largest mill additions reported in these two States were those of the Beacon Mfg. Co., Swannanoa, N. C., and the Kershaw (S. C.) Cotton Mills.

Expansion of production facilities by rayon yarn producers and the weavers of rayon fabrics, as noted in the above table, was responsible for almost $1,000,000 of the new construction undertaken during the first half of the year. Additions by the Tennessee Eastman Corp., Kingsport, Tenn., and Industrial Rayon Corp., Cleveland, Ohio, and Covington, Va., were largest in this group.

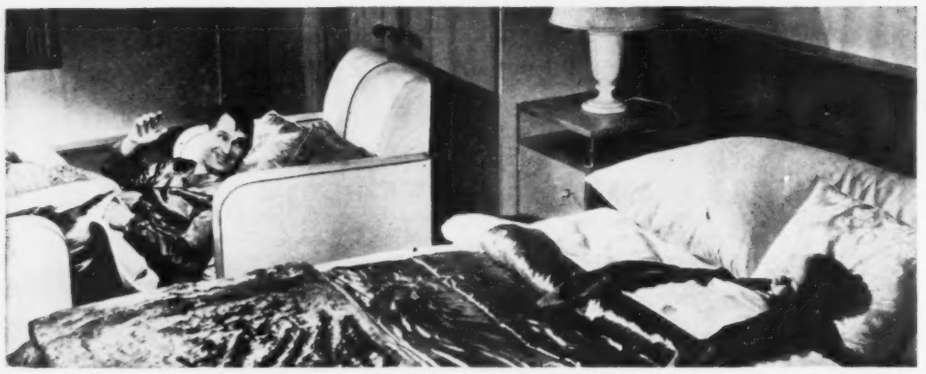
The installation of power-generating equipment by several mills, representing new power plants in some cases and sizeable additions in others, involved the expenditure of about $950,000, including boilers, generators and other equipment. Conspicuous among these projects were additions to power plants of the Proximity Mfg. Co., Greensboro, N. C.; Appleton Co., Anderson, S. C.; and Pacific Mills, Lyman, S. C. New power plants were built by the Shelby (N. C.) Cotton Mills and the Chatham Mfg. Co., Elkin, N. C., both of which had previously purchased their entire power requirements.

The replacement and modernization of mill roofs received increased attention this year. Aragon-Baldwin Cotton Mills, Chester, S. C.; Industrial Cotton Mills, Rock Hill, S. C.; and Brandon Corp., Woodruff, S. C., let contracts for new roofs. Other plants, including Avondale Mills, Sylacauga, Ala., and Appleton Co., Anderson, S. C., took advantage of rock-bottom building costs to erect new warehouses for the storage of cotton and finished goods.

New additions for knitting mills were more numerous than any other type of construction. Among the important projects of this kind were extensions by the Walker County Hosiery Mills, LaFayette, Ga.; Utica Knitting Co., Anniston, Ala.; Hudson Silk Hosiery Co., Charlotte, N. C.; Mission Hosiery Mills, Los Angeles, Calif.; Pilot Full-Fashioned Hosiery Mills, Valdese, N. C.; and the McEwen Knitting Co., Burlington, N. C.

Tubize-Chatillon Corp., at Hopewell, Va., completed a new building to accommodate equipment of the Argus Knitting Mills which was transferred from Brooklyn, N. Y. This was one of several construction jobs for which plans were prepared by Robert & Co., Inc., Atlanta, Ga. In Gainesville, Ga., a modern building was erected for Owen Osborne, Inc., of Philadelphia, Pa., which is moving machinery to the new location. J. E. Sirrine & Co., of Greenville, S. C., were the engineers on this project.

There was considerable increase in the number of building contracts let during the last of May and the first half of June. Plans for mill extensions were pushed more rapidly because of the possibility of limitation on additions to productive equipment after the new textile codes went into effect. Several finishing plants installed additional tenter frames and other processing equipment in anticipation of just such a situation. Other manufacturers decided that construction costs would not be any lower, and, having had additions under consideration for some time, concluded that the time had come to undertake such projects. It is expected that other mill additions will be announced this summer, especially in cases where it will be necessary to balance equipment for efficient operation under the new limitation of machine hours.



Scene from "Bedtime Story" by Paramount featuring Maurice Chevalier. Walls in background are stretched muslin. This picture is called the first "all muslin" picture turned out at Hollywood.

By A. B. Laing

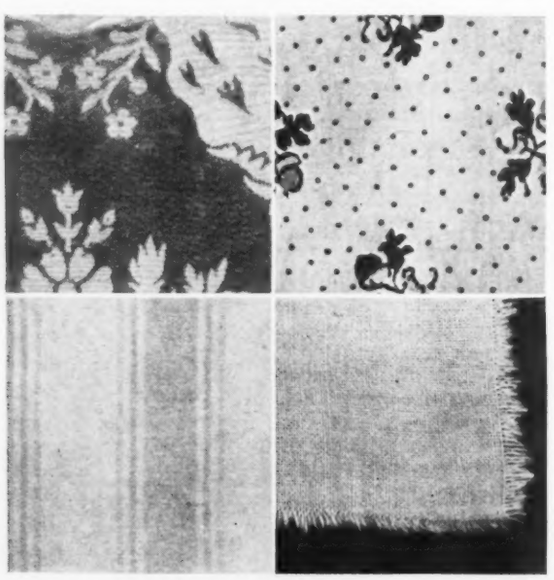
Muslin in the Movies . . .

FABRIC WALLS BRING ACOUSTIC PERFECTION TO HOLLYWOOD "SETS"

◆ *Here is an important use for textiles which one of the country's leading industries had to work out for itself. Perhaps there are other industries which would use more textiles if they could be shown how to overcome some small difficulty.*

MUSLIN has passed a "screen test" in Hollywood. It is being featured in most of the important pictures in current production. Early in the year muslin orders from the studios were up 60%, and one studio manager predicted further advance when summer "shooting" schedules swing into "high."

In explanation—muslin is now replacing plaster and other hard-surface products, in the walls of "sets" which are studio representations of palaces and prisons, interiors of mines, breweries, U-boats, or an "exterior" of the Gobi desert.



Movie fabrics: 1. Rayon damask used in "Tonight Is Ours." 2. Glazed chintz for bungalow windows, etc. 3. Wall covering for apartments and drawing-rooms. 4. All-purpose muslin—even in close-ups, it cannot be distinguished from plaster.

Each feature length reel requires from 15 to 80 sets. Each set will average roughly 100 sq.yd. of wall area. A major company will have from three to ten pictures in simultaneous production, each of which takes about six weeks to complete. Ignore the scores of smaller, independent companies, and multiply all this by nine—the number of larger producers—and the total annual muslin demand for this one purpose is found to approximate 2,000,000 sq.yds.

The present situation will be better understood if we "cut back" a moment to those first silent movies of the 1912 era. Pictures of that period were little more than peep-shows. Backgrounds were of painted canvas. Tables, chairs, draperies — everything not actually required for stage "business" was painted on the canvas background. The slamming of a door would start the entire house and all its furnishings a-shaking, but neither audiences nor producers were critical.

Came the dawn of an awakened public taste, a public with money to spend on this new form of entertainment. Producers strove to outdo one another in realistic sets. The age of plaster was born, with "exteriors" and "interiors" faithfully and extravagantly lifelike. Architects, engineers and artisans of every kind took a hand, and motion picture studios began to assume the character of the huge industrial plants they are today. A typical big studio could muster a payroll of 3,700, only about 3 to 4% of whom were actors and actresses.

Then came 1926—"sound." And with it, chaos. The hard-surfaced set walls reverberated to the actors' voices, and the "mike" recorded a rumble-like drum fire. Public demand was for penthouse, and similar stories, involving modernistic interiors with abrupt corners and angles which gave back echoes like a Kentucky cave.

A practical solution was sought in the use of various textiles. In the picture "Luxury Liner," for instance, over 1,000 yd. of silk moiré were stretched across the plaster walls of some of the "flats" (as sections of sets are called). But this twin labor operation was costly.

Some concerns reverted to the canvas of earlier days, only to find that sound passed through it like a sieve, and the recording was flat or faint to the point of disappearance. Hard objects were introduced on the set to "kick up" the sound, but often such large numbers of pictures, furniture etc., were either not in character or else interfered with stage business.

Since no bright "textiler" was on hand to tell producers what to do, the textile industry lost many thousands of dollars to their friends in the lumber and wall-board game. Studio engineers began again experimenting with these harder materials hoping to find a way to conquer microphone vibration. Eventually, it was found that a veritable honeycomb of framing members behind the panels could make them so rigid that all reverberation was eliminated. Acoustically perfect, but costly and cumbersome.

Then came the darkness of depression with some of the picture giants running thousands monthly into the red and economies in production mandatory. Attention was again focused on set building, and "Back to Textiles" was the slogan. Again the problem of overcoming that total loss of sound! The solution was ridiculously simple. Some nameless hero merely tried tacking a bit of ordinary building paper behind a muslin flat,—and behold—all sound was trapped and the recording made perfect!

Although Hollywood seers say "nothing is true of the picture business for ten minutes," it nevertheless looks as if muslin was now due for a long-term contract.

The system of handling muslin evolved at Paramount has proven particularly successful, Ed. Davis, construction superintendent, reports. Here the material is bought in quantity lots, pre-dyed, shrunk and pressed. From the paint formulas on file at the studio a set of color panels is prepared and furnished to the dyers who supply the goods in seven standardized colors. In this way the muslin "field" will exactly match the painted wood or plaster trim of the set. Time spent doctoring paint is saved, while the dyed field not only eliminates painting costs entirely, so far as the field is concerned, but saves the time otherwise spent waiting for painted walls to dry, a considerable item in an industry which reckons its overhead as $2,500 per hour.

The pliancy of this textile is its asset. Where architectural rules permit, corners are rounded to scotch echoes, the turn of course being made on a few bandsawn wood members, a decided economy. Straight runs are made on 2x3-in. pine frames, stiffened by 1¾-in. braces. Additional stringers are cut in to form a nailing surface for dadoes or other trim, after which the common building paper is applied. The dyed muslin is then stretched across the "flat," one man pulling, another tacking. Trim and other overlays are then planted—to

Alice White in pose before a muslin wall on which plaster mouldings have been "planted."

appear as an apparently homogenous wall. In the accompanying scene from "Bedtime Story," it is doubtful whether the audience can discern where muslin begins and plaster or wood ends. From samples examined it is believed that a 64x68, 3.15-yard, 40-in. sheeting is the fabric commonly used.

Besides functioning night and day on "flats," thousands of yards of black or, sometimes, blue-dyed muslin are used in the construction of night scenes. Rather than transport a large cast of players with all shooting paraphenalia to a distant "location," Universal Studios recently erected a full-size airport office within a sound stage for their picture "Airmail." The story called for a fog to gather over the landing field outside the airport. To accomplish this a muslin tent 100 ft. in height and 125 ft. in length was built round the airport. Drums of an aromatic oil were connected to the stage's air conditioning plant. A realistic fog was forced through the duct system and trapped by the muslin tent. The blue muslin itself was invisible to the eye of the camera.

Muslin in the movies has helped to destroy echoes and reverberation while saving construction money. A. E. Leahy, an assistant studio manager states: "I estimate that the muslin set is cheaper by 35%. Admittedly, there is some perceptible trembling of the wall when heavy doors are slammed, etc., but otherwise the job is perfect."

Scene from "Luxury Liner" in which a muslin covering over plaster was used. Over 600 yd. of a silk moire was also used for wall covering, this shows in right background and is similar to No. 3 shown in fabric group on opposite page.

FINDING

THREAD COSTS OF

Knitted Undergarments

By S. M. Peterson

TESTS to determine the thread cost in finishing knitted undergarments serve a number of useful purposes. Thus, when the amount of thread of each kind employed in making a specific style of garment has been determined, costs can be quickly brought up-to-date as prices for thread change. Again, the amount of thread used will vary according to the length of the stitch, setting of tension, evenness of the thread, and manner in which machines are operated. Therefore a series of tests made under different conditions will often show that a certain method of operation is far less wasteful of materials than are the others.

The accompanying table gives the results of an actual mill test conducted on 50 doz. infants' wrappers. All threads were priced and purchased by the pound, with the exception of the 70/3, which was bought by the cone. Weighings of ten cones of the 70/3 gave an average weight of 5042 grains of thread per cone.

Due to the fact that only a small amount of thread was used from some of the cones employed in the test, extreme care was necessary in weighing. To make certain that the test was accurate, the following procedure was followed: First, we weighed each cone separately; next, groups of cones containing the same kind of thread; finally, all cones taken for the test. When the test was completed, the same weighing procedure was followed with the partially empty cones. The sum of the differences in weights of each cone checked with the difference in weight of all the cones; otherwise it would have been necessary to repeat the test.

Operation	70/3 @ $0.60 per 5,042 gr.			28/1 C.P. @ $0.22 per 7,000 gr.			40/2 Merc. @ $0.46 per 7,000 gr.			45/3 @ $0.50 per 7,000 gr.			20/2 Merc. @ $0.38 per 7,000 gr.			Totals
	Grains Used	Grains per Dozen	Cost per Dozen	Grains Used	Grains per Dozen	Cost per Dozen	Grains Used	Grains per Dozen	Cost per Dozen	Grains Used	Grains per Dozen	Cost per Dozen	Grains Used	Grains per Dozen	Cost per Dozen	Cost per Dozen
Seaming	5,523	111	.01315	6,836	137	.0043	4,211	84	.00553	....	....	....	....	....	....	.02298
Facing	....	....	....	....	....	....	438	9	.00057	....	....	....	....	....	....	.00057
Button staying	....	....	....	....	....	....	546	11	.00072	....	....	....	....	....	....	.00072
Stitching neck	....	....	....	....	....	....	656	13	.00086	....	....	....	....	....	....	.00086
Shelling	....	....	....	....	....	....	17,938	359	.02358	....	....	....	....	....	....	.02358
Attaching hangars	273	5	.00065	....	....	....	....	....	....	....	....	....	....	....	....	.00065
Budding	438	9	.00104	....	....	....	....	....	....	....	....	....	....	....	....	.00104
Crocheting sleeves	....	....	....	....	....	....	1,769	39	.00259	....	....	....	1093.75	21.875	.000119	.00271
Buttonholing	....	....	....	....	....	....	547	11	.00072	....	....	....	....	....	....	.00072
Sewing buttons	....	....	....	....	....	....	....	....	....	218.75	4.375	.00003	....	....	....	.00003
Totals	6,234	125	.01484	6,836	137	.0043	26,305	526	.03457	218.75	4.375	.00003	1093.75	21.875	.000119	.05386

Results of mill test to determine thread cost in finishing infants' wrappers

Fulling Rayon-Worsted Knit Goods

By William E. Herrick

ORDINARILY knit goods for both men's and women's wear are fulled in the conventional type of rotary machine. Exceptions to this rule occur in the case of fabrics which would be damaged in appearance or handle by pressing between rolls or in a crimp box. An example is a worsted-rayon fabric which calls for a loop or standing finish. Materials of this nature can be handled, however, in a revolving cylindrical machine, preferably one with an oscillating motion.

The writer has employed a laundry washer for this purpose, keeping the fulling solution at a level of about 8 in. As a makeshift, he has also used a barrel which was fitted with a shaft on each end. These shafts were supported on sawhorses, and the barrel was turned by hand.

If fulling is carried out before scouring, the wetting-out method described in a previous article (TEXTILE WORLD, Nov., 1932, p. 76) is recommended. It is essential, however, that the solution in the soaping machine be kept at a constant level, and that an addition of soap be made after running each piece. At frequent intervals the "dead" soap should be allowed to settle and then should be drawn off.

The type of soap employed is an important factor in finshing knit goods; and it has been the author's experience that a low-titre soap of good quality gives satisfactory results. A soap of this type dissolves readily, penetrates quickly, and rinses easily. These properties make for even fulling, and minimize the danger of soap blotches, as well as the thin or broken nap which is likely to occur when prolonged rinsing is necessary. For the type of material under consideration a solution containing 6 oz. of soap to 1 gal. of water should be suitable.

After the goods have been wet out, they are transferred to the fulling machine and run for 10 min. Sufficient soap is now applied by hand to wet thoroughly any places in the cut which appear to be too dry. The fabric is now run until fulling is complete (usually 1 to 2 hr.). During this operation soap is added as necessary to compensate for that absorbed by the goods, a lukewarm solution one-half the strength of that employed for wetting out being sufficient. In case of fabrics which are to be piece dyed, ample allowance must be made for the stretching which will occur in the dye kettle.

Slubs in Worsted Roving...

A PAGE FROM AN OVERSEER'S NOTEBOOK

By Arthur Winslow

MANY slubs which really originate in the Bradford drawing department are not discernible until the roving has been spun into yarn. This makes the duties of the drawing overseer much more difficult than would be the case if imperfections were always clearly visible as soon as they were formed. This many times necessitates a complete check-up of possible causes of yarn faults in the drawing. The following list is a partial one of those causes and is the result of an overseer's experience in the drawing room.

Gill Boxes:

Greasy top.
Cut top.
Noil in top.
Poor piecings in top.
Waste from aprons in top.
Large neps in top.
Other bunches of material in top.
Guides too close together, so that stock rides over pins.
Guides too far apart, so that shorter fibers, which tend to go to outside of sliver during drafting operation, become uncontrollable.
Aprons wet with emulsion, the fibers from the slivers adhering.
Aprons dirty from extended operation without cleaning.
Broken, bent, dirty, and split fallers.
Sliver too deep in fallers — (a) roughened by faller itself.
Sliver riding on faller pins — not enough back draft.
Poor piecings made on gill boxes.
Sliver roughened in any way — (a) handling. (b) sharp edges on gill-box cans.
Waste and flyings allowed to accumulate on machine and on floor.
Too much or too little emulsion.
Excess of waste on underclearers.

Drawing Boxes:

Roughening of sliver in any way.
In piecing up ends in creel, operator neglects to replace twist which has run out sliver ends. With the twist out, the short fibers are not controlled well in the drafting box.
Dirty or lapped carrier rolls or tumblers.
Excess of waste on underclearers used under front rolls or under carrier rolls.
Lack of sufficient tension on front or back rolls.
Front carrier rolls too near or too far from nip of front rolls.
Tumbler rolls out of position (yet for some lots it is necessary to remove them entirely for good work).
In the case of colored blends, it is best to remove the underclearers on all front rollers in the drawing department, except on the gill boxes and on the cone rovers. Otherwise, the stock rolls up so fast under the rolls that waste is carried along by the sliver at intervals. To prevent the stock from lapping with the underclearers absent, the ends in the guide fingers of the heavy drawing should be run in together as much as possible so as to facilitate cohesion of all ends while on the drawing frame.
Broken pigtails on flyers.
Missing buttons on wings, and broken wings.
Cork rolls damaged or worn excessively.
Failure of operators to take out piecings.
Careless treatment of sliver in taking out piecings.
Fraying of sliver on bobbins by pressing on chalk too forcibly.
Bobbins having greasy barrels or splintered heads.
Allowing stock to dry out excessively —(a) "head work" allowed to stand to one side instead of being processed in turn. (b) "pieces" of sliver laid to one side by operator not pieced in by end of working shift. (c) humidifying system not turned on early enough on Monday morning.
Ratches too open, short fibers not controlled.
Ratches too closed, excess short fibers caused by breaking longest fibers in blend.
Heavier front carrier-roll tumblers might help control the short fibers on the four-spindle frames. Present equipment might be as follows:

	Weight	Diameter
1st four-spindle		
No. 1 line	1 lb., 15 oz.	1 3/8"
No. 2 line	1 lb., 13½ oz.	1"
2nd four-spindle		
No. 1 line	1 lb., 15 oz.	1 3/8"
No. 2 line	1 lb., 13½ oz.	1"

If 2-lb., 2-oz. front tumblers were put on the front carrier rolls of the first four-spindle frames, with a 1 3/8 in. diameter, then the 1-lb., 15-oz. tumblers could be placed on the second four-spindles.
The heavier tumblers would allow the front tumblers to be moved up closer to the front rolls, because of less lapping of the stock around the tumblers, which causes large slubs in the sliver at intervals.

Cone Drawing:

Piecings made on second finisher creel not broken out at front of machine.
Roughening of sliver through improper handling.
Greasy bobbin barrels and splintered heads.
Carriers, tumblers, underclearers, and cork rolls follow same settings and adjustments as for the heavy drawing, except that tumbler rolls should always be kept in place.
Both tumbler rolls out at once when cleaning.
Extra heavy front tumbler rolls should be used on second finishers and reducers.
Machines not kept clean.
Underclearers, especially, should be kept clean.
Flyer legs not kept clean.
Extra ends not broken out from sliver on bobbin.
Broken ends on bobbins not rolled together securely enough, so that an extra end is processed off the bobbins on the succeeding machine. This is especially true of broken ends made on the cone rovers, the double end being later spun.
When "pieces" run out in any cone-drawing creel, the partially filled bobbins not being processed on the lifter should be taken off their spindles and put in a truck to prevent fly waste.
The relative humidity should be about 65% to 70% for white work.
Too-open ratch, short fibers not controlled.
Too-closed ratch, excess of short fibers formed by breaking longest fibers.
Providing a great many small slubs persist, it may be desirable to close up the ratches in order to control short fibers in the blend being processed. An example of this follows:

	Original Ratch	New Ratch
1st Four-Spindle	7 "	6½"
2nd Four-Spindle	6¾"	6½"
Six-Spindle	6½"	6¼"
Ten-Spindle	6¼"	6 "
Second Finisher	6 "	5¾"
Cone Reducer	5¾"	5½"
Cone Rover	5¼"	5½"

(Two gillings preceded the first four-spindle.)

Hosiery Quality Rewarded

BY FAIR PRICES ONLY WHEN CAREFULLY SPECIFIED AND ANALYZED

By Carl Epps

◆ *If quality in hosiery is to be rewarded, it must be recognized; and if it is to be recognized, some means must be provided by which the buyer can accurately compare one stocking with another. The author of this article offers a specification and analysis form which, when properly utilized, will supply the basis for this comparison. Although he confines his remarks to women's circular hosiery, the principles he outlines are applicable to other products.*

DURING periods of overproduction, or rather underconsumption, such as has confronted the hosiery industry during recent years, the price pressure on the part of buyers and the concessions to obtain orders on the part of manufacturers have gone too far for profitable operation, even on a bare existence scale for labor. Naturally everyone wants the best value for the money, and merchandise buyers have competitors; but pressure at times borders on unfairness in the minds of manufacturers, particularly when an agent is in between the manufacturer and the merchandise buyer, as is usually the case. Much of this imaginary unfairness may and can be minimized through cooperative analysis.

The lowest price on a 300-needle women's seamless Chardonize hose, for example, establishes a basis of price regardless of whether it is as good as or inferior to other merchandise of this specified class, and regardless of whether it is made of finer or coarser yarns with more or less material; but analysis will bring out differences far greater than those represented in prices.

A good basis for quality analysis is the accompanying hosiery specification and analysis sheet. These specifications may be supplemented with strength, wear, finish, and other quality comparisons; but, utilized as shown, they should give manufacturers and merchandise buyers a better basis for a fair comparison of competitive prices and bids and permit a more inteliigent placing of orders on the merits of the merchandise. The diagram at Fig. 1 simplifies explanation of the specifications. The meaning of all terms on the diagram and specification sheet are self-explanatory to manufacturers; therefore, only a general explanation is necessary.

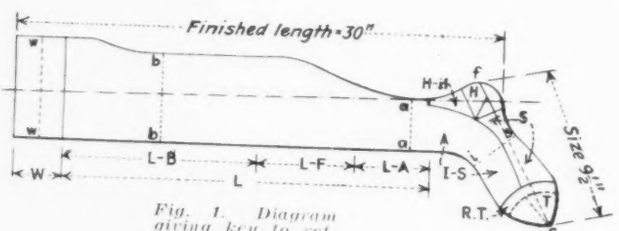


Fig. 1. Diagram giving key to references in adjacent sheet

Space at the top of the sheet is provided for reference information, class of hose, gage, and machine specifications. The first column, beginning at the left, lists the various sections of women's hosiery and shows the major sections as well as subsections which may or may not carry yarn changes. The second column codes these different sections and identifies them with corresponding letters on the diagram, Fig. 1.

Columns 3 and 4 provide for the machine chain set-up, 3 being for sub-sections and 4 for the total chain and main sections or different parts of the hose. Column 5

MILL
DESCRIPT.
MACHINE

HOSIERY SPECIFICATION AND ANALYSIS SHEET

DATE

Model K. NEEDLE, 300. GAGE, 70. DIAM., 3½. SIZE, 9½.

TEST NO.
STYLE

		Chain Sec.	Links Totl.	Stretch Width Inches	Wales Per Inch	Total Width Inches	Courses Per Inch	Length, Inches	Yarn — Count and Kind	Condting, Waste, & Adjustment Space	Wt. Lb. Per Doz.	Price Per Unit	Yarn Cost Per Doz.
MAKE-UP	M-U	..	..	..	..	..	..	..	..	..	..		
WELT	W	..	..	..	..	..	..	..	..	..	..		
Inside	W-I	8	16	11.00	25	6.00	46	L 2.75	100/26 Chard.	..	..	$0.00	..
Outside Picot	W-O	8	..	..	..	..	..	..	..	..	..	..	..
Or/&	W-P	..	..	..	..	..	..	..	..	..	..	..	..
Stripe	W-S	..	..	..	..	..	..	..	..	..	..	..	..
LEG	L	..	68										
Boot	L-B	40	..	11.00	30	5.00	34	L 22.50	100/26 Chard.	..	..	..	..
Fashng.	L-F	16	..					(14.25)		..	..	..	..
Ankle	L-A	12	..	8.50	48	3.13	38	(4.50)	..	..	..	..	..
								(3.75)	..	..	..	..	..
Hi-Heel	H-H	9											
IN-STEP	I-S		24	8.50	44	2.37	44	L 2.75	80/1 C.P.M.	..	..	..	..
Sole	S	15	..	..	44	1.00	36	F (5.00)	100/26 Chard.	..	.7250	0.85	.6150
RING-TOE	R-T	..	..	..	..	..	..		80/1 C.P.M.	..	.0406	0.75	.0350
HEEL	H	..	16	..	..	..	..	F (0.13)	60/2 C.P.M.	..	..	..	..
Narrow	....	8	..	..	..	..	..	L 2.00					
Widen	....	8	..	..	..	..	..	F (1.87)	60/2 C.P.M.	..	..	..	..
TOE	T	..	26	..	..	..	..	..	..	..	..	..	..
Narrow	....	13	..	..	..	..	..	F (2.50)	60/2 C.P.M.	..	..	..	..
Widen	....	13	..	..	..	..	..	..	..	..	..	..	..
Tip	....	..	..	..	..	..	..	..	..	..	..	..	..
LOOP-MARG.	L-M	..	2½	..	..	..	..	..	..	..	..	..	..
TOTAL									60/2 C.P.M.	..	.1094	0.50	.0547
				Fin. Leg. Length L-30.00						Finished Weight	0.8750		$0.7047
				Fin. Foot Length F- 9.50									

provides for specifications of stretch-width of the hose at desired points, such as the main sections—welt, *w-w*; boot, *b-b*; ankle, *a-a*; and instep *i-s*. Column 6, Wales per Inch, is the number of vertical ribs per inch, the average of which when multiplied by the width of the hose Column 7 (Total Width Inches), at the point counted (see diagram), should give the total number of needles in the cylinder on which the hose was made. Column 8 is for courses per inch at different points, and Column 9 is for sectional and total length in inches.

The count and kind of yarn as determined is listed in Column 10; and Column 11 is used for conditioning, waste, and other adjustments. Columns 12, 13, and 14 are provided respectively for yarn weights, price per pound, and total yarn cost per dozen in the finished hose. To this must be added fixed and allowable waste to obtain gross yarn used to figure for gross yarn cost.

The specification figures shown in the different columns are those of the 300-needle Chardonize hose illustrated in Fig. 2. This stocking is size 9½, is 30 in. long, and weighs 0.8750 lb. per dozen. The extended net yarn cost without waste amounts to $0.7047 per dozen. For argument's sake, a duplicate of this stocking was finished on a drying form of slightly wider proportions and measured only 29 in. long. It might have been finished on a form of slightly narrower proportions and have measured 31 in. or more. Each of these three finished shapes and dimensions are acceptable, but bring out the point that the wider form for the same apparent quality of merchandise to finish 30 in. long would require more yarn and the narrower form less yarn than was used in the illustrated sample. An analysis will bring out the differences in value which should command a differential in price, provided other factors offset each other.

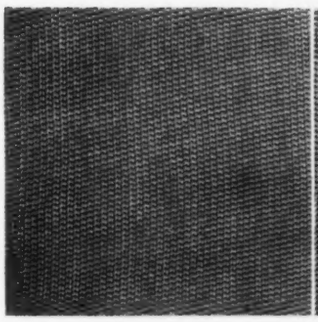


Fig. 2. Fabric from 100-denier, 300-needle Chardonize hose.

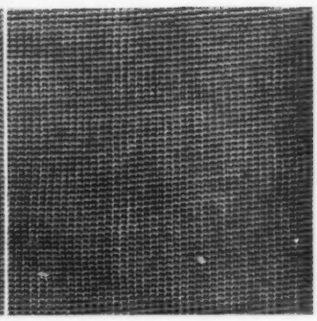


Fig. 3. Fabric from 150-denier hose otherwise comparable to Fig. 2.

Another 300-needle Chardonize hose is illustrated in Fig. 3, but is made with 150-denier instead of 100-denier. This stocking contains, on the same basis as the one in Fig. 2, $0.7702 worth of yarn per dozen; but try and get the additional cost without an analysis comparison. Of course there are many pro and con factors affecting prices from the standpoint of the producer, selling agent, and customer; but quality should command the respect it deserves.

The few points brought out in this discussion are merely hints compared to the value of a little study of the specification sheet. From the list of analysis possibilities may be selected as much or as little as will prove of service in a given case.

Rayon on Cotton Machines

DESIRABLE MODIFICATIONS EASILY MADE IN SPOOLERS AND WARPERS

By A. I. Metart

IN SETTING forth the following suggestions for altering cotton spoolers and warpers to convert rayon skeins into warps, the writer wishes to stress the advisability of investigating the economic advantages of using low-grade yarn for the few rayon warp ends required by certain cloth constructions.

Converting a spooler into a skein winder is not difficult or expensive. The bobbin-box is removed, and a 2-ft.-high wooden stand is built on the floor in front of the spindles. On this are fastened fixtures to hold the swifts. These fixtures and swifts are readily procurable from machine builders. Besides the tension obtained from the weight on the swift, an added tension is secured by having the yarn run under a bar just underneath the thread guide. This bar, of ½-in. stock, is tied with string so as to hang about 3 in. under the thread guide. The idea of tying it this way is to enable it to hang loosely so that the action of the yarn will swing it freely back and forth. Except for losing the production of a few spindles on account of the difference between spindle gage and width of swifts, this arrangement makes a very efficient skein winder. Speeds are determined by observation and by the condition of the rayon.

For a long time it was considered impossible to make a decent rayon beam without special equipment. The chief difficulty was in securing a uniform tension on all of the ends with a minmum of shiners. Based upon considerable experimenting, these suggestions are offered with the assurance that they will work reasonably well.

The first step is tipping the warper creel. Instead of the spool being held by the creel at an exactly level position, as in conventional warping, the spool is inclined, one side of the creel being raised about 1 in. The object is to secure a slight and even tension at each spool. With the spools at this angle, large and thick felt washers are placed at the lower ends to act as bearings. These washers are inserted between the creel and the spool during tying-in. Care must be taken to have as nearly the same weight of yarn as possible on each spool.

To obtain further uniformity of density in the warp, a thin closely woven flannel should be applied on the rise roll and the other rolls with which the yarn comes in contact. Low warper speeds are required. Warpers having cones or other intermediate methods of driving the cylinder at variable speeds are desirable.

It is a good idea to have beam barrels turned down and trued to the heads. Oil-stained yarn can be avoided by covering the barrel with a layer of paper.

Texas Cotton

TYPES OF FIBER FROM NEW SOURCE IN SOUTH PLAINS

By Carl D. Brandt
Texas Technological College, Lubbock, Texas

THE region known as the High South Plains is that section in northwest Texas upon the caprock that lies south of the so-called Panhandle. This is a region of about 8,000 square miles, equivalent in size to the State of Massachusetts. The average elevation is approximately 3,500 ft. above sea level and the lands are level, free from stones and trees. Cities and towns can often be seen from distances of twelve to fifteen miles, and one is often misled in estimating distances because of the general flatness of the terrain.

Ten years ago it was believed that this section of the country was fit for nothing but grazing land for cattle. However, after some study and experimentation it was found that cotton and various grains could be successfully grown. As a result, farmers from other parts have come here to settle and a new cotton-producing center has developed. Due to its location, the city of Lubbock has become a central distributing point, and during the year 1932 handled a large part of the 500,000 bales produced in this territory.

The land is easily cultivated. One farmer with the members of his family can easily care for a quarter section, or 160 acres. Fertilizers are not required, as the soil still retains its fertility, and insects, such as the boll weevil, for example, give no trouble. There are also a number of disadvantages which give the farmer cause for worry. There is always the possibility of a dry season, as the average annual rainfall is but 20 in. Then, too, the growing season between frosts is short, generally about 200 days; and the proper maturing of the cotton is delayed by the cool nights.

Certain characteristics have been developed in the cotton plant to meet these conditions. Cotton planted in this section must of necessity mature rapidly. Ordinarily blossoms will appear approximately 60 to 70 days after planting, depending on general weather conditions during this early growth period. Rain following shortly after the time of planting and then warm sunny days cause rapid growth and early blooming. It has been found that there are a number of varieties which will produce their entire crop of cotton fiber within a period of 110 days after the first blossoms appear. Of these varieties Acala, Mebane, and Half-and-Half have proved the most popular. The ideal type for this Plains territory would be one that matures in approximatley 90 days. The cotton must also be "wind resistant"—that is, the lint must stay in the boll during the violent wind and sand storms that occur in these parts quite frequently. It would therefore be impractical to attempt to raise the varieties that grow to be waist high.

The so-called Half-and-Half has in the past exceeded all others in total acreage planted. It gets its name from the fact that the seed cotton when ginned produces by weight one-half seed and one-half lint or fiber. When grown on the Plains it rarely reaches this proportion and seldom produces over 40% lint. The plant as grown seldom exceeds knee height, but bears a large number of bolls. The mature fiber is of good character, but the staple is short, running up to about $\frac{7}{8}$ in., the majority being around $\frac{3}{4}$ in. In the former days of so-called "hog-round" buying the farmer was not so severely penalized for short staple as he is today; and since the yield per acre and the gin turn-out was high, Half-and-Half naturally became quite a favorite. At the present time the tendency is to get away from this type and plant those which will produce a longer staple. A fair average yield is from a quarter to a half bale per acre; this amount will of course vary with conditions during the growing season. Some plots have produced as much as a bale per acre under exceptionally favorable conditions.

Some irrigated sections are planted to cotton, as an abundance of water is available at depths of from 30 to 60 ft. Since the cost of pumping from these shallow depths is not very great, a good many farmers have adopted this means of overcoming failures due to drought. By proper irrigation it is possible to increase the yield per acre and also grow a longer staple length. However, irrigated cotton seldom possesses the body and fiber strength of that grown under natural conditions.

Ordinarily, the greater part of the crop grown in this section is not picked as in other parts. The cotton plants are small, and picking therefore is difficult. A more rapid and generally used method of gathering is the so-called "snapping." There is also the "sledding" method. Within the last few years various mechanical harvesters have been placed upon the market. These are improvements over sleds in many ways. They gather less leaf and also fewer "bollies." Some are also arranged to give a preliminary cleaning or dusting, thereby removing some of the dirt. The human element is, however, lacking, as these machines cannot distinguish between the ripe and the unripe bolls. A good mechanical harvester would be of great value to the cotton growers of this part of the country. Of this year's crop on the Plains it has been estimated that over 80% has been gathered by snapping. Even when carefully ginned, the sample will run a grade or two below what it might have been if properly picked.

The accompanying table of comparative figures may be of interest in showing effect of harvesting methods:

Method of Gathering	Pounds of Seed Cotton	Pounds of Lint	Per cent of Lint	Pounds of Seed	Per cent of Seed	Pounds of Trash	Per cent of Trash
Hand Picked.....	1480	520	35.1	850	57.4	110	7.5
Hand Snapped....	1830	450	24.6	790	43.2	590	32.2
Machine Gathered.	2170	434	20.0	800	36.8	936	43.2

"Snapped" Machine-picked Hand-picked

Abstract of paper presented at recent Lowell Textile Institute Alumni Day.

New Testing Standards

OFFERED BY TEXTILE COMMITTEE OF A.S.T.M. IN ANNUAL REPORT

NEW standards and revisions in old were offered by Committee D-13, the textile committee of the American Society for Testing Materials, in its report to the parent society made during the annual meeting at the Stevens Hotel, Chicago, June 26. An abstract of the report, signed by Prof. Herbert J. Ball, of Lowell (Mass.) Textile Institute, chairman follows:

I. Proposed Tentative Standards.—The committee recommends for publication as tentative the following two new specifications and one new method of test:

Tentative Specifications for Holland Cloth;

Tentative Specifications for Asbestos Roving;

Tentative Methods of Test for Small Amounts of Copper and Manganese in Textiles.

II. Proposed Revision of Standards.—The committee is recommending revisions in nine of the present standards covering textiles. These revisions are divided into two groups as follows:

Group A.—Revisions in the following standards which the committee recommends be made immediately and accordingly asks for the necessary nine-tenths vote at the annual meeting in order that the revisions may be submitted to letter ballot of the Society for immediate adoption as standard:

Standard Specifications for Tolerances and Test Methods for Tire Fabrics Other Than Cord Fabrics (D 122-30);

Standard Specifications for Tolerances and Test Methods for Tire Cord Woven and on Cones (D 179–30);

Standard Specifications for Tolerances for Hose Ducks and Belt Duck (D 181–25);

Standard Specifications for Tolerances and Test Methods for Cotton Yarn, Single and Plied (D 180-27);

Standard Specifications for Tolerances and Test Methods for Electrical Cotton Yarns (D 203–25);

Standard Specifications for Tolerances and Test Methods for Cotton Sewing Thread (D 204–27).

Group B.—Revisions in the following standards recommended for publication as tentative for one year before referring them to letter ballot of the Society for adoption:

Standard General Methods of Testing Woven Textile Fabrics (D 39–27);

Standard Specifications for Tolerances and Test Methods for Certain Light and Medium Cotton Fabrics (D 274–29);

Standard Specifications for Tolerances for Hose Ducks and Belt Ducks (D 181–25).

III. Proposed Revision of Tentative Standards.—The committee is presenting extensive modifications of the following tentative methods and definitions and recommends that, as revised, they be continued as tentative:

Tentative Methods for Identification of Textile Fibers and Their Quantitative Determination in Mixed Goods (D 276-31 T), completely revised;

Tentative Definitions of Terms Relating to Textile Materials (D 123–30 T), completely revised.

IV. Advancement of Tentative Standards to Standard.—The committee recommends that the following five tentative specifications be advanced to standard:

Tentative Specifications for Tolerances and Test Methods for Knit Goods (D 231–28 T);

Tentative Specifications and Tests for Cuban (Jute) Raw Sugar Bags (D 275–27 T);

Tentative Specifications and Test Methods for Asbestos Tape for Electrical Purposes (D 315–31 T);

Tentative Specifications for Chafer Tire Fabrics (D 316–31 T);

Tentative Specifications for Enameling Duck for the Tire Industry (D 336–31 T).

V. Advancement of Tentative Revision of Standards to Standard.—The committee recommends that the tentative revisions of the following three standards, which have been standing for a year or more, be advanced to standard:

Revision of Standard Specifications for Textile Testing Machines (D 76–27);

Revision of Standard Specifications for Tolerances and Test Methods for Cotton Sewing Threads (D 204-27);

Revision of Standard Specifications for Tolerances and Test Methods for Asbestos Yarns (D 299–29).

VI. Withdrawal of Standard.—The committee recommends that the Standard Definitions of Terms Relating to Textile Materials (D 123–30) be withdrawn. These definitions are being replaced by the extensive list of definitions being recommended for publication as tentative.

The committee also recommends that the Standard Specifications for Tolerances and Test Methods for Electrical Silk and Cotton Tapes (D 259–27) be withdrawn.

The recommendations appearing in this report were submitted to letter ballot of the committee previous to the meeting. All received favorable votes.

Pamphlet on Textile Materials

The committee having in charge the preparation of the new edition of the D-13 Pamphlet on Textile Materials to be issued soon after the annual meeting consists of W. H. Whitcomb, W. E. Emley, K. B. Cook, D. C. Scott, and D. G. Woolf. The pamphlet will contain all the standard and tentative specifications, methods of testing, and definitions of terms relating to textile materials which the committee has developed, and will be more conveniently indexed and arranged than the present edition.

The following members of the committee are serving as its representatives on committees of other organizations: A. M. Tenney on the Subcommittee on Rayon of the American Association of Textile Chemists and Colorists; Ephraim Freedman on the Textile Shrinkage Committee of the Textile Section of the New York Board of Trade; A. M. Tenney, W. H. Whitcomb, and R. T. Fisher, the latter in place of the late Dr. W. F. Edwards, on the Sectional Committee on Specifications for Sheeting functioning under the procedure of the American Standards Association.

Subcommittee Changes

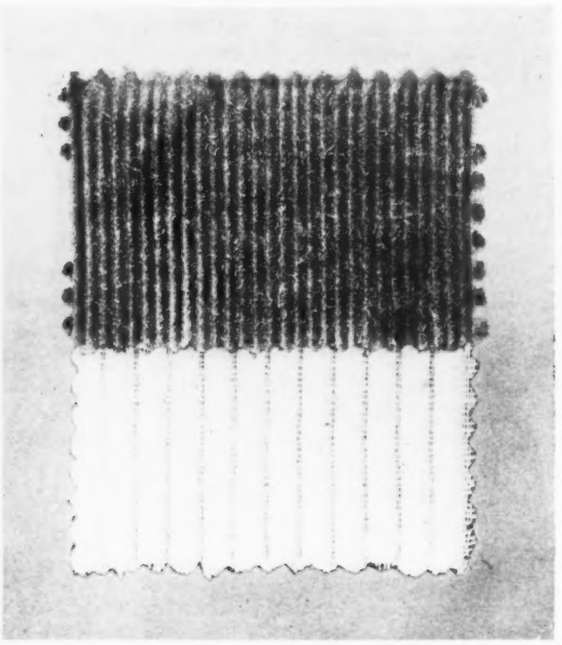
The Advisory Committee, at the spring meeting, decided to discontinue Subcommittee A-6 on Rope Fibers and Subcommittee B-3 on Knit Goods on account of their inactivity. A new Section VIII on Sewing Threads consisting of eleven members has been organized under Subcommittee A-1 on Cotton. K. B. Cook is the temporary chairman, and it is the expectation that this section will be actively functioning in the fall.

Velveteen and Corduroy

COTTON CONSTRUCTIONS AND SOME WEAVES SUITABLE FOR SILK

THE writer was asked recently to suggest some velveteen and corduroy weaves which might be woven in silk. Where silk is to be used in such weaves, it had best be a spun yarn—say a 60/2—and used only in the pile filling, as a suitable two-ply cotton ground will give a better foundation, will not show, and will be less expensive.

Of the accompanying illustrations, *A*, *B*, *C*, and *D* are designs for four velveteens with plain foundation weave. The latter is represented by the crosses; and the base weaves for the pile interlacings, represented by circles, are shown at the left of the plans or groups of plans. In each design the number of pile picks to each ground pick is equal to the number of picks in the repeat of the pile base weave. This is a convenient ratio, but other proportions of pile to ground picks are easily arranged in the same weave.



Narrow wale and wide wale corduroy

In design *A* the pile weave is based on the one-and-two twill, which yields a filling float of five; and there are three pile picks to each ground pick. This design produces a fine and rich effect and is extensively used.

Designs *B* and *C* are each arranged four pile picks to one ground pick; but in design *B* the pile interlacing is based on the one-and-three twill, while in design *C* it is based on the four-sateen weave. Both of these give a float of seven and produce exactly similar results in the finished cloth.

Design *D* is arranged five pile to one ground, and the base for the pile interlacing is one-and-four sateen, which gives a float of nine.

In order to produce a dense pile, a large number of picks per inch is required to be inserted, the number varying from about 300 in 40s cotton filling for design *A*, to about 500 in 60s filling for design *D*. Weaves *E* to *H* have varied grounds.

In corduroy structures the pile picks are bound in at intervals in a straight line. The cutting knife is run right up the center of the space between the pile binding points, with the result that the tufts of fibers project from the foundation in the form of cords or ribs running lengthwise of the cloth. At *L* is shown a weave that gives a float of nine for one pile pick, a float of seven for the next, and a float of nine for the next, the idea being to give a roundness to the cords.

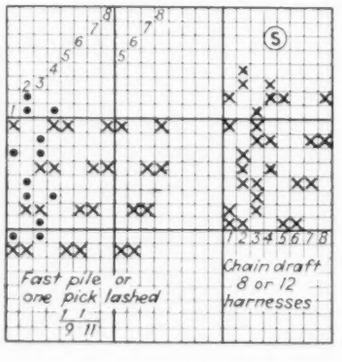
The example at *P* is a weave with a one-and-two twill back. This is arranged two pile picks to each ground pick; and very heavy structures in this weave are woven with comparatively few ends per inch, the number varying from about 28 to 36. Weave *Q* is similarly arranged, but is one ground pick to two pile picks. The ground is the two-and-two twill back.

Weaves *R* and *S*, which are used for especially heavy and wide cords, have their alternate picks interwoven more frequently, with the object of producing greater

Corduroys Velveteens	Designs	Counts of Cotton Warp	Counts of Filling	Ends per Inch in Reed	Ends per Inch in Cloth	Ground Picks per Inch	Pile Picks per Inch	Total Picks Per Inch	Length of Warp in 100 yd. Cloth	Width in Reed for 24 in. Gray	Weight in lb. of 100 yd. 24 in. wide	Tufts per Square Inch
	A	2/60	40	72	81	75	225	300	104	27	32	3,200
	B & C	2/70	60	72	83	88	352	440	103	27½	31	3,200
	D	2/80	70	76	88	90	450	540	103	28	32	4,800
	E	2/20	16	38	44	80	160	240	102½	28	63	4,500
	F	2/80	70	72	84	108	324	432	102½	28	26.7	4,600
	G	2/70	60	72	84	104	416	520	102½	28	35.8	5,900
	L	2/60	50	72	87	92	276	368	104	29	34	2,350
	P	2/20	18	30	37	140	260	420	102½	29½	82.7	1,760
	Q	2/18	18	32	39	170	340	510	102½	29½	112	1,680
	R & S	2/16	18	32	40	144	288	432	102½	30	100	980

Design B $\frac{81 \times 24 \times 104}{840 \times 30} = 8.202$ lb. warp $\frac{300 \times 27 \times 100}{840 \times 40} = 24.107$ lb. filling

24.107
8.202
32.309 lb.



By Ghent R. Robertshaw

variety in the length of the tufts and so causing the rounded formation of the cords to be more pronounced. All the designs shown are suitable for silk.

Construction Details

The construction details of the foregoing examples (in cotton) are given in the accompanying table; and in order that comparisons may be made, the writer has specified the width in reed for 24 in. in the gray, the calculated gray weight of 100 yd. of cloth 24 in. wide, and the approximate number of tufts to the square inch in the finished cloth.

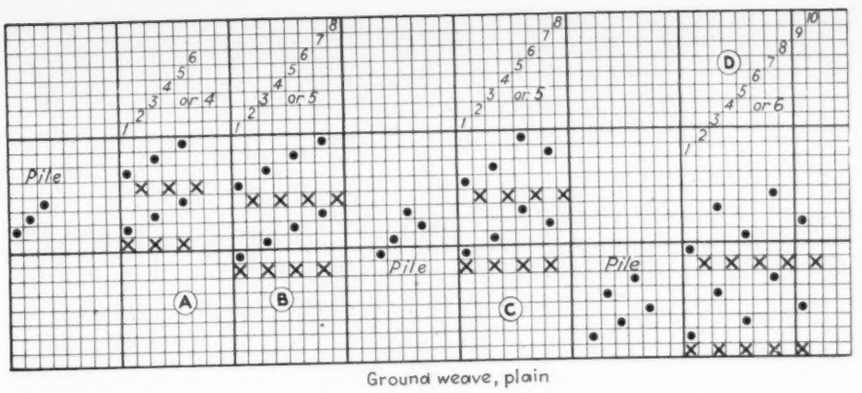
A feature to be noted is the great shrinkage in width from reed to cloth, which varies from about 12½% in the lighter velveteens to 20% in the heavy cords. There is very great tension put on the warp. A positive shedding motion is most generally used and the shrinkage in length is very slight. For this reason all the warp is usually brought from one beam, although some of the ends are much more frequently interlaced with the filling than others. In any design the weight of cloth can be varied greatly by varying the ends per inch and the thickness of the filling. Reducing the set of the warp enables more filling to be put in, and the excessive weight of the heavy cords is obtained by employing a loose foundation weave with few ends per inch.

A good quality of cotton is required for the warp, because of the great strain put upon it; and in the best cloths, the finest-fibered cottons are used for the filling. The finer the fibers, the more are required in forming a given size of thread and the more are contained in each pile tuft. Comparisons of the number of tufts in different structures can be made by means of the following formula, which gives the number of tufts per square inch:

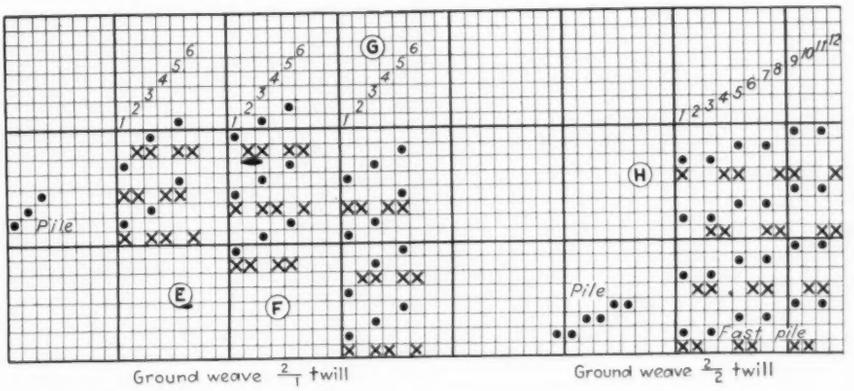
$$\frac{\text{Ends per inch} \times \text{pile picks per inch}}{\text{Ends in repeat of pile weave}}$$

For example, a construction might figure out as follows:

$$\frac{72 \times 240}{6} = 2880 \text{ tufts per square inch.}$$



Ground weave, plain



Ground weave $\frac{2}{1}$ twill — Ground weave $\frac{2}{2}$ twill

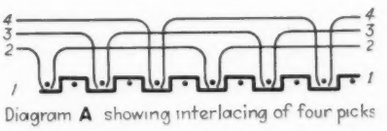


Diagram **A** showing interlacing of four picks

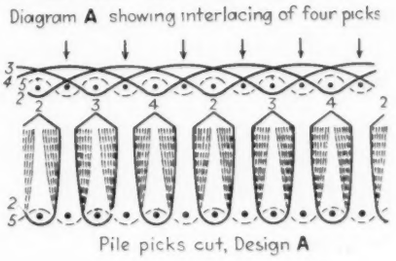
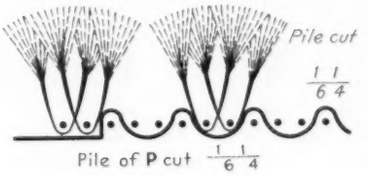
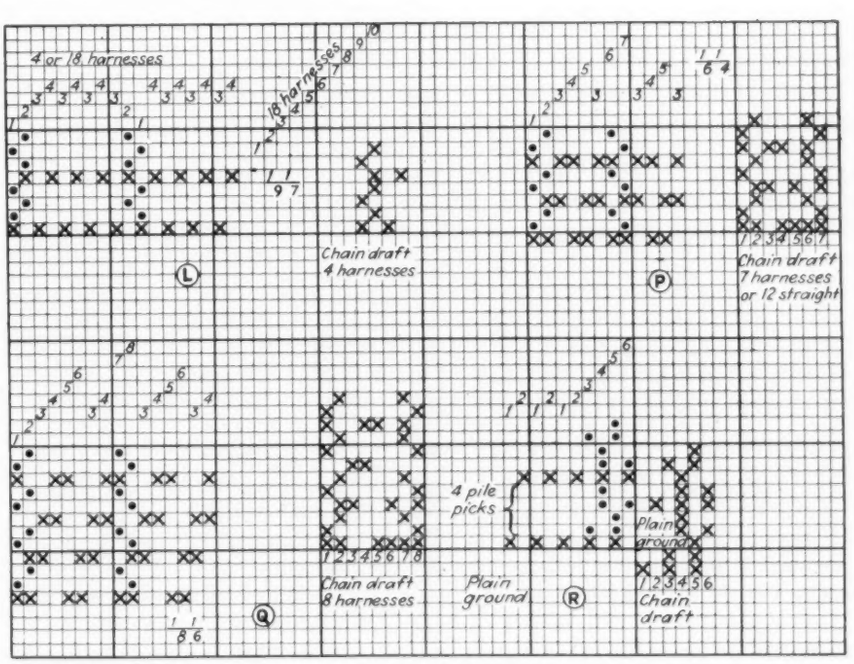

Pile picks cut, Design **A**

Diagram of **P**, showing the interlacing of the ends and pile filling and the cutting races. $\frac{1}{6}\frac{1}{4}$



Pile of **P** cut $\frac{1}{6}\frac{1}{4}$



The Rayon

FACES MANY PROBLEMS

By Emile T. Rumpp

CONSIDERABLE trouble has been experienced recently with semi-dull and dull viscose yarns, which, after throwing with the usual crepe twist, fail to impart to the cloth the pebble characteristic desired in crepe fabrics. Opinions have been advanced that this lack of crepe may be due to the pigment in the yarn, or to the sizing or emulsion put on the yarn during throwing. A third point, and probably the most vital one, has been kept somewhat in the background, and that is the question of twist. Other factors, such as setting of twist, drying, moisture content of the yarn during winding and throwing, spindle speeds, tensions, and length of time the yarn is left on bobbins or cops, are of great importance and cannot be overlooked.

The twist given to ordinary bright viscose yarn for crepe purposes runs as follows: 75 denier, 55/60 turns; 100 denier, 50/55 turns; 150 denier, 45/50 turns; and 200 denier, 40/45 turns. This gives the throwster a range or tolerance of five turns for unavoidable variations. Some throwsters are able to control their twist within two turns; and in this case it is common to specify the twists as follows: 75 denier, 60/62 turns; 100 denier, 54/56 turns; 150 denier, 48/50 turns; and 200 denier, 44/46 turns.

Crepe Twists

The standard twists mentioned above are for ordinary crepes. When a particularly strong pebble is desired, or when a fairly dense warp is used, the twist must of necessity be increased. It is not uncommon to find 150-denier yarn with 55 turns of twist, or 100-denier yarn with 60 turns, or even more, where a strong crepe effect is sought. On the other hand, there are people to whom a crepe twist is a crepe twist. They expect to get a flat crepe or a pebble crepe at will from the same yarn; that is to say, a yarn twisted with the same number of turns. This, undoubtedly cannot be done.

Pigmented yarns do not possess the life, resiliency, and spring of unpigmented yarns, nor generally their strength. Therefore it is not to be expected that such yarns will react to twist in exactly the same way as do bright yarns; and unless their charactertistics in relation to twist are determined, a great deal of trouble may be experienced with them. At least, until this determination is made, an element of doubt will remain as to the proper twist for the production of various effects with pigmented yarns of various deniers.

Effect of Pigments

The writer believes that owing to the character of pigmented yarns a greater amount of twist should be inserted in them when a duplication of the effect produced by a bright yarn containing normal crepe twist is desired. A few experiments made so far have borne out this theory, but it is not to be expected that twist can be materially increased without injuring the yarn. Fairly good creping results have been obtained with pigmented, 100-denier viscose yarn in which 60/62 turns of twist had been inserted, as against the usual 54/56 turns for the unpigmented. This is an average increase of six turns per inch, which ordinarily should prove sufficient. The same relative rate of increase naturally would hold for other sizes. This, however, must not be taken as a fast-and-rigid rule, but sound judgment must be exercised in each and every case, depending on the degree of dullness of the yarn and its pigment content.

It is quite obvious that a yarn containing 1% pigment will not act in the same manner as a yarn containing possibly 3% pigment. In some cases the yarn might contain so much pigment as to render it entirely useless for creping purposes. At any rate, no attempt should be made to reach the very limits of twist that a yarn can absorb. When the optimum point for good throwing has been attained, it is folly to go beyond it, regardless of the effect produced in the ultimate cloth. Furthermore, too much twist gives the cloth a hard and harsh handle, which is generally quite objectionable. In addition, increased twist raises the cost of throwing and causes a smaller yardage of yarn to be returned because of greater contraction. In many cases, in fact, it seems ill-advised to use pigmented yarn for the filling of a crepe fabric, as any bright yarn will become quite dull from the effect of high twist.

Conditioning Rayon

Due to its inability to recede from elongation, and to the fact that its strength is reduced in proportion to the tension applied, rayon does not withstand the same high speeds in twisting as are used with real silk. In addition, most throwsters find it necessary to condition the rayon skeins preparatory to the throwing of crepe yarn. The materials employed for conditioning fall into two classes —a lubricant and a binder or adhesive. For imparting the necessary softness and lubricity to the yarn, various soluble oils are available; as a binder a high-grade, soluble gelatin, or similar product, is generally employed. The purpose of the conditioning treatment is to compensate for the strength lost in twisting in order to minimize breaks and improve the working qualities of the yarn on the loom and—which is very important—to keep the twist in place. This coating or size also helps to lay occasional broken filaments, and is particularly valuable with low-grade or inferior yarns. As a matter of fact, it is a question whether much of this unclassed or low-class yarn could be used for the filling of crepes without this binder.

Some throwsters simply lubricate their yarns previous to throwing, but most of the better throwsters both lubricate and size them. It is now common practice to conduct these two processes in a single operation, which also includes tinting. Occasionally, for special work and for a special price, two distinct operations are used. When this procedure is followed, sizing is the final operation and is carried out on a special machine after oiling and throwing.

Cause of Defects

Twist, even after it is set by steam, still has a strong tendency to creep and move from place to place, and it

Throwster

IN HANDLING PIGMENTED YARN

is not uncommon to find a yarn with standard twist of 50/55 turns containing 40 turns in one place and perhaps 65 in another. It is this jumpiness of the twist which causes unevenness of the pebble; filling bands; and, in part, crow's-feet, cracks, and worms.

A throwster with a good reputation to guard—one who is anxious to deliver a yarn that will weave well and make good, even cloth—can do so only by keeping his twist stable and always within the two or five points allowed. He can accomplish this by stopping the twist from creeping and jumping, and this is one of the prime functions of sizing. The opinion has been advanced that the way a throwster sizes his yarn may have an important bearing on the subsequent creping of the yarn in the fabric. The fact is that the size by itself—and here we mean a good, normal, and appropriate size—has no influence whatever in that direction. The sizing itself does not cause the yarn to become livelier and to crepe more than an unsized yarn. It only operates to give a good-running, even yarn. If a yarn is inherently of a lifeless nature, a coating of size will not vivify it. The right amount of twist, together with all-round good processing, will give it the spring and life required for creping.

No throwster, if he knows his business, would be foolish enough to apply a great excess of size or use for sizing a product which would bind the yarn too much, cause scouring trouble, or prevent the yarn from sliding and curling in the cloth or cause it to stick to the warp. If such careless and unintelligent processing did take place, the creping quality of the yarn would be influenced, of course, and a problem would present itself for solution.

After the skeins have been treated in the lubricating and sizing bath, they must be carefully dried and conditioned. The moisture content of the yarn in winding and throwing is of great importance, and if not properly controlled, can be the cause of bad work and serious complaints. In a damp state, rayon yarn has an increased capacity for elongation when subjected to strain or tension. It is obvious, therefore, that a yarn uneven in denier and other characteristics will result if undue or spasmodic stretch occurs in these two operations, with attendant distortion to the yarn and a possible disruption or disturbance of the molecular relationship of the viscose.

Setting the Twist

When the yarn is twisted or thrown, it is lively and springy, and unless the yarn is kept taut, the twist will curl, creep, snarl, and otherwise act in an unmanageable fashion. It cannot be used in the loom in that condition, and the twist must be set, so that the yarn will lie practically straight when unravelled and will behave and become workable.

Extreme care must be exercised in the setting or steaming process, and two dangers guarded against. One is over-steaming, which might set the yarn so permanently as practically to kill its usefulness as a crepe yarn; and the other is condensation, which also has detrimental effect on the yarn. In order to avoid condensation, the better throwsters are now resorting to setting by dry steam in a vacuum. It is questionable, in the writer's mind, as to whether it is advisable to steam or set a pigmented yarn to the same extent as a bright yarn. It would seem not, but the point has not been fully proved at this writing.

Another question that is sometimes overlooked is that of the storing of thrown yarn. It is a common practice with good, alert weavers to use thrown yarn with as much celerity as possible and to order shipments from the throwsters to about balance their daily requirements. This is done with the knowledge that yarns lying too long in compressed form on bobbins or cops tend to become excessively set and thereby fail to give the amount of creping that is expected of them. This also holds true of gray goods that are kept in stock for an extended period of time.

The strength of soaking bath, time of soaking and extracting, winding tensions, speed of spindles, type of flyers and spools employed, etc., are factors which each mill must investigate for itself. It is the proper coordination of all these elements which enables certain throwsters to deliver yarns which consistently give good results.

Warping Hard-Twist Silk...

SUGGESTIONS FOR ECONOMIES

By H. E. Wenrich

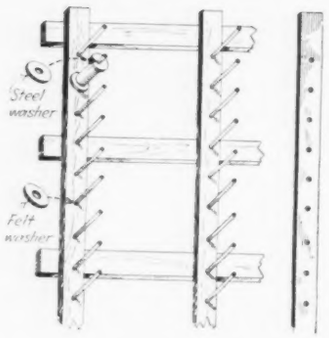


Fig. 1. Steel washer above bobbin

Fig. 2. Felt washer below bobbin.

Fig. 3. Strip of felt.

REGARDLESS of seasons, hard-twist materials are always in demand. The old stand-bys are ever popular, such as chiffon and georgette; and some of the new recruits, such as sand crepe, show an inclination to stay with us permanently. It is fair to assume that at least one-fifth of all looms in the silk mills are mounted for hard-twist fabrics.

In preparing hard twist for the warping room, it is of utmost importance to see that the yarns are free from a surplus of oil and at the same time that they have sufficient moisture for pliability and freedom from harshness. The material should be kept intact in cases in the vault and weighed out to the warpers as the supply is needed daily. In this manner the yarn will not become dried out in the warper room.

Most mills are insisting that yarns be shipped in from the throwsters on fiber bobbins. The wood bobbins contain less silk, and the yarn often catches in the cracks in the heads and snaps off, the loose thread flying up into the cross reed and breaking out other ends, making a small smash.

Many mills are equipped with small warping creels, but the advantage of a large creel is important. Suppose, for instance, the creel has 600 spindles. With throwsters' bobbins every other spindle is skipped, allowing but 300 bobbins to be placed in work on the creel. Consequently a warp of 6210 ends will require 21 bands. If 30c. is to be paid per band, the cost will be $6.30, plus the beaming. Now should we be able to use 600 bobbins on the same basis, the cost would be but $3.15, a saving of half on placing the yarn on the warper. We cannot, however, fully utilize the original 600-bobbin creel, because the space will not allow the large bobbins and, if we use the small bobbins, the benefits will not compensate for the loss of time in tying-in, the extra shipping charges on the bobbins, and the many extra knots added to the warp. A saving can be made, however, by a small outlay in extra spindles. Should the creel have a row of spindles, 24 vertically, for example, we can add 18 or 20 spindles per row. By this means we shall obtain a creel of at least 480 useful spindles, which will reduce the cost of warping by an amount which may repay the initial investment within a week.

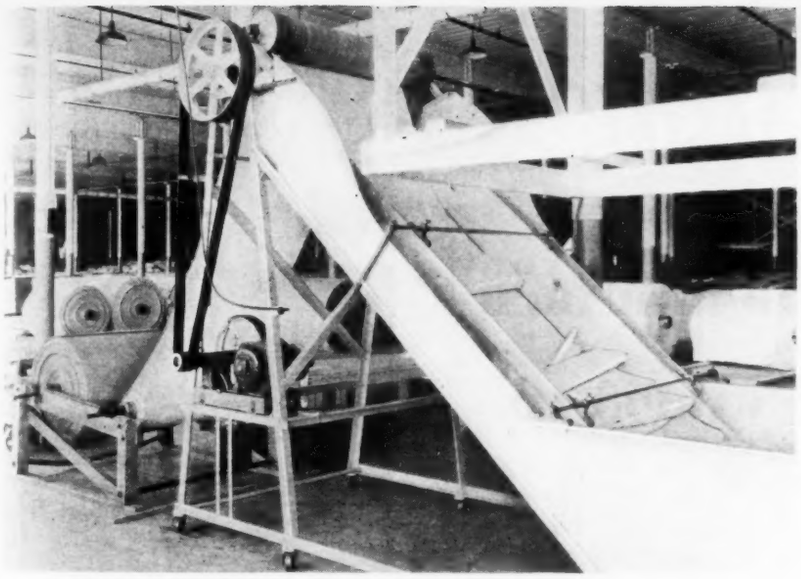
In warping hard-twist yarns, several tricks will help the inexperienced to overcome the troubles encountered. Warpers who have had years of experience on natural raw silks and soft silks are the same as a novice when making their first warps of hard twist and require patience in learning how to make satisfactory warps. One difficulty encountered is that the bobbins gain such speed that when the warping machine is stopped for the placing of a cross or cut-off, they keep on running, causing slack ends, which tangle around the spindles and the other bobbins. In order to overcome this trouble, some sort of brake or friction device must be devised for each individual bobbin. One type consists of a large steel washer placed over the spindle onto the top of the bobbin, as shown in Fig. 1. The steel washer retards the bobbins when the machine is slowed down. Another type consists of a cork or felt washer underneath the bobbin, as in Fig. 2. Still another type, which is quickly placed on the creel and serves the purpose well, is a strip of felt placed on a row of the spindles, as in Fig. 3. The character of the latter strip can be made to conform to the type of the material being warped. For a chiffon or two-thread hard twist, a light piece of material can be used; while for the larger twists used in sand crepe, a rough felt material can be employed. The braking qualities of the material should be governed by the size of the yarn.

The cross reed should run the entire width of the space provided. When a 480 creel is used, the reed should be approximately 480 dents in order that the spaces between yarns will be as wide as possible. The farther the ends are kept apart at the glass dents on the creel and at the cross reed, the better the yarn will run.

Another excellent kink, which should be recommended, consists of using but one cross rod while placing the yarn on the machine. After the cross is thrown one rod should be taken out and the silk run with but one rod in place. This keeps the yarns separated and allows knots to pass through to better advantage. It also eliminates the small smashes at the cross rods.

If the filling is of the same material as the warp stock, it is an excellent idea to use all small bobbins in the quilling department. In place of running down the warp bobbins until they are empty, the warper can run the bands to the cut-off and tie in all bobbins which will not last another band. The machine is stopped about 2 to 5 yd. from the cut-off, according to the distance of the creel from the table. The replacement bobbins are then tied in, and the knots run up to about the location of the cut-off. This places all the knots at the start or the finish of the warp, preventing hang-knots in the pieces where large excessive knots cause this defect. The bobbins removed in this manner are used up as filling.

After the warp leaves the warping room and enters the twisting department, there is still a chance to save some costs. In twisting in repeats on the same loom, there are several devices on the market that will allow the drop wires to be removed with the harness and taken to the twisting department, after which the warp can be twisted and placed back in a different loom with the drop wires intact. These devices have been in use within the past year and save the cost of dropping the wires on the loom.



Portable scray used at Union Bleachery has variable-speed drive and other novel features

A USEFUL AUXILIARY BUILT AT A NOMINAL COST

By H. H. Iler
Mechanical Engineer
Union Bleachery, Greenville, S. C.

Portable Cloth Scray

SCRAYS of various design have long performed a useful service in finishing plants. Ordinarily they are built in the plants in which they are used, and are either belt driven from the machines they serve or are driven separately by constant-speed motors with pushbutton, magnetic-switch control to enable the operator to stop them when too much stock has accumulated. The former type, of course, follows the varying speed of its parent machine if the machine happens to be variable-speed operated; but, even so, it must have either a clutch drive or tight and loose pulley, as synchronism under all conditions of operation is impossible.

In a finishing plant the machines may be required to process fabrics from rolls, boxes, or flat trucks. In any case the tension required for pulling in is a varying factor, which can, and often does, affect finish and production. This variation is entirely eliminated by the use of power-driven scrays, which do the pulling in, and from which the tension is easily adjusted and kept uniform.

Recently one of our processing departments requisitioned two scrays which would meet the following conditions:

1. Must be portable to permit use on any machine.
2. Must be light enough to permit ease of movement from machine to machine.
3. Must have easy, simple, and accurate adjustment of speed throughout a range of 55 to 165 yd. per minute to suit any machine.
4. Must be steady at all speeds.
5. Must be equipped to permit operation from any convenient lighting socket.

One of the scrays designed and built in our own shop is shown in the accompanying photograph. Details of construction which enabled us to meet the requirements mentioned above are as follows:

1. Mounted on six Bond No. 3G3 ball-bearing casters.
2. Constructed with frame of 2x2x¼ in. steel members, doweled and bolted, with lock washers under all nuts. Sheet metal pan and chute.
3. Equipped with Reeves No. 28 Vari-Speed motor pulleys with countershaft unit.
4. Steel angle shapes employed for all framework, which has proper cross bracing to secure rigidity; Fafnir ball bearings used on shafts of rolls, which are carefully trued and balanced.
5. Driven by General Electric Type SCR 1-hp. single-phase, 110-volt, 60-cycle motors equipped with push-button magnetic switch for start-and-stop control.

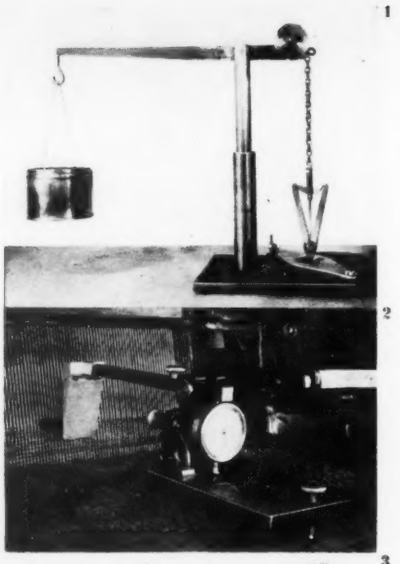
The Vari-Speed motor pulleys are mounted directly on the motor shaft and drive with a V-belt to a flat-faced receiving pulley on a countershaft. A Browning paper pulley on the opposite end of countershaft drives up at an angle to a crown-faced pulley on the shaft end of the bottom feed roll. The feed rolls are made of laminated poplar so built up as to provide a square bore to receive a square shaft in press fit. After the shaft is pressed in, the roll is put up on lathe centers, the shaft ends are turned round to dimension, and next the roll body is turned likewise. Locking rings are then forced into recesses which have been machined into the end of the wood roll body, and a few thin, tapered steel wedges are driven inside the circles of wood inclosed by the locking rings to insure tightness of both rings and shaft.

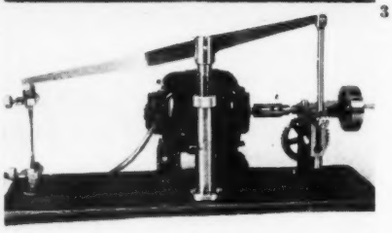
The scray chute and receiver pan are made of Armco iron fabricated to fit the frames. This chute is inclined at an angle of 45° from the horizontal, as this was found by experimentation to be suitable for the satisfactory sliding of various types of cotton fabrics. It will be noted that the scrays have wood guide boards mounted in the pan and so arranged as to be adjustable to various widths of fabrics.

As an afterthought, the feed rolls were covered with wool felt to prevent damage to fabrics and to insure quiet and smooth operation. This covering is in the form of a strip 2 in. wide and ¼ in. thick wound on spirally and cemented as wound. The spiral of the top roll is opposite in direction to that of the bottom roll in order to avoid a sidewise lead in either direction.

No complicated construction difficulties are encountered with the type of scray shown in the photograph, and the device can be built at nominal cost in the average plant machine shop. Our use of these particular scrays has convinced us that they are all that we could wish for in increasing efficient operation of our processing machines and making for more satisfactory results in finishing cotton piece goods.

Special Testing Machines AID RESEARCH AT BIGELOW-SANFORD CARPET CO.





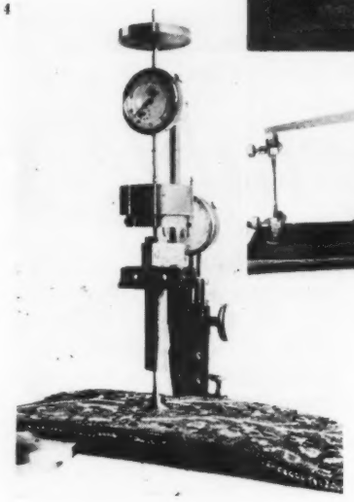


Fig. 1. Tuft-bind tester

Fig. 2. Tensionometer

Fig. 3. Rubber flexing machine

Fig. 4. Fabric resiliometer

MORE than ever before, research in the carpet industry is now being directed toward the evaluation and improvement of the wearing qualities of floor coverings. In a discussion recently of present-day research activities, G. E. Hopkins, technical director, Bigelow-Sanford Carpet Co., Inc., described several types of apparatus developed and used by his company for testing and controlling the durability of rugs and carpets. Some of the more interesting of these devices are a tuft-bind tester, a tensionometer, a fabric resiliometer, and rubber flexing machine.

The tuft-bind tester (Fig. 1) was constructed for the purpose of measuring the force required to pull a tuft from the back of a rug. It consists essentially of "pliers" for securely grasping one end of the selected tuft, means for applying a measurable force at a uniform rate, and means for securing the fabric sample either to a plane surface or to a mandrel of circular cross-section. The pliers are suspended from one end of a beam, at the other end of which is a 1-liter container. The force is uniformly applied through a 3-to-1 lever ratio by running a stream of water into the container. As soon as enough pull has been exerted to pull out the tuft, the container drops down and the flow of water is cut off manually. By weighing the container and water, the operator can determine the force required to pull out the tuft.

In Fig. 2 is shown the tensionometer, which was designed especially for Bigelow-Sanford by Prof. T. H. Frost, of the Massachusetts Institute of Technology, for use in determining the relative tension of warp ends in a loom, or during beaming or setting operations. The instrument is set on a horizontal support which extends perpendicular to and for the full width of the set of warp ends. With the lever arm held up by the cam, the whole assembly is rotated until the bottom of the weight just touches the end (or several ends) to be tested, at which setting the reading of the dial gage is recorded. The cam is then released, which allows the weight to lower itself until in equilibrium with the tensile forces on the particular warp end. The difference between the gage reading at this point and the initial gage reading is an indication of the tension of the end tested. The test is repeated for the other ends in the beam, the variation in tension determined, and proper means taken for correction of any irregularities.

For determining the effect of repeated flexing below the point of ultimate elongation of rubber test specimens, the rubber flexing machine (Fig. 3) was developed. It consists essentially of a crank-operated rocker arm at the free end of which is a clamp for holding the upper end of the rubber specimen, the lower end being secured by a similar clamp fastened to the base of the machine. The specimen is flexed 60 times per minute. It may be flexed until it ruptures, and the number of cycles noted; or it may be flexed a set number of times, and the permanent stretch and loss of tensile strength determined.

The fabric resiliometer (Fig. 4) is designed to measure the relative compressibility and resiliency of pile fabrics. It consists of a horizontal base plate upon which the sample is held without any bending or humping by means of spring clips. A movable arm, which is operated vertically through a rack and pinion, carries the front gage assembly which provides the standard 1-in. diameter pressor foot with its initial load of 0.59 lb. (0.75 lb. per sq.in.) and means of increasing the pressure in increments of 0.50 lb. per sq.in. up to 3.75 lb. per sq.in. The pressser foot is mounted on the lower extension of the spindle of a dial deflection gage which gives readings to 0.001 in. A second dial gage is provided to show the position of the movable arm with respect to the stationary base, readings of the front gage being noted when the rear gage reads zero. For expressing the results the apparent thickness of the samples is plotted against the pressures at which the readings were taken and a curve showing the compressibility of the sample results. It is also possible to obtain a rebound curve, which shows the tendency of the pile to return to its original thickness as the load is successively decreased. When used in connection with the compression curve, the rebound curve gives a measure of resiliency.

Crabbing and Scouring

PRECAUTIONS NECESSARY IN PREPARING LIGHTWEIGHT VENETIANS

By G. L. Atkinson.

◆ *Many of the defects noticeable in finished fabrics can be traced to improper treatment of the goods in the crabbing operation. In the accompanying article is described a routine which has been found satisfactory for the preparing of lightweight venetians. Particularly stressed are the precautions which must be taken to avoid those faults most commonly encountered in processing these materials.*

THREE faults which must be guarded against in finishing lightweight venetians are cockles or blisters in the dyed fabric, a flattened twill; and a thin or papery handle. Prevention of these defects and production of the desired full handle calls for skill and care in crabbing and scouring. In the following paragraphs will be discussed the causes of these and other defects and the precautions necessary to avoid them.

Although some finishers attempt to dispense with the crabbing operation on this class of material, numerous faults are likely to occur if this operation is omitted. On the other hand, while heavy venetians sometimes require a semi-fulled appearance, this is not usually required on the lightweight fabrics under consideration.

Two-Bowl Crab

For crabbing these materials the writer employs an ordinary two-bowl crab, equipped with a steaming can and "top-weight" apparatus. Tension control is particularly important in crabbing—blistering or cockling being caused by insufficient tension properly to set the fabric and a papery handle being due to excess tension. Both bowls of the crab are filled with boiling water, and the goods run with just enough tension to keep them taut and prevent creases.

In some plants it is the practice to steam the goods on the crab in order to prevent cockling. This should not be attempted, as it tends to give a thin papery finish, water marks, and a cross-twill effect. Use of the top-weight arrangement should also be avoided; otherwise watering and an undesirable handle may result.

Finishers who have attempted to dispense with the crabbing operation—simply scouring the goods in a rope machine—have run into all kinds of difficulty. Streakiness, running marks, crimps, and cockling are the most common defects which can be traced to this omission. Streaks are difficult to remove from this type of fabric. Crimps are next to impossible to cure; in fact, the only remedy known to the writer is a treatment of the goods in a falling-stocks machine. If the fault is not discovered before the material is dyed, it is usually necessary, after fulling, to return the goods to the dye kettle for redyeing.

Scouring Routine

The scouring routine employed by the writer on lightweight venetians is as follows:

1. Rinse and run dry for 10 min.
2. Scour with soap and soda for 35 min.
3. Rinse with warm water for 55 min.
4. Rinse with cold water for 10 min.

This procedure gives a thorough scour, provides ample time for cooling of the fabric after scouring, and insures against uneven dyeings.

To summarize, the successful preparation of lightweight venetians calls for careful control of tension and avoidance of extreme pressure and undue steaming. If these precautions are taken, there should be no difficulty in obtaining the full handle desired on these goods.

Prevent Decay!

ROLE OF WOOD-PRESERVATIVE TREATMENTS IN REDUCING MILL REPAIR COSTS

IN MOST textile centers woods which possess a high, natural durability are comparatively expensive. Conversely, many of the cheaper grades of lumber have a low resistance to wood rot. The economic advantage of using wood which has been treated with a preservative is that the useful life of the cheaper grades will be from three to ten times as great as the untreated; and the cost usually will be less than for lumber which possesses natural durability. Concerning the use of treated lumber for construction or for repair work, a bulletin of the U.S. Department of Commerce states:

"Preservative treatment may be said to pay for itself when the additional life given the timber offsets the entire cost of the treatment. Proper treatment, however, will not only pay for itself, but will increase the life of the timber sufficiently to yield large returns on the investment."

Simply stated, wood rot is an infectious disease; certain fungi taking the place of the bacteria common in human diseases. The difficulty lies in the fact that practically all lumber is infected during its trip from tree to mill. The disease ordinarily contracted is a mild case and can be dealt with by the proper means; but replacing the worst planks in a rotting roof with new, green lumber is equivalent to placing healthy people in contact with smallpox patients.

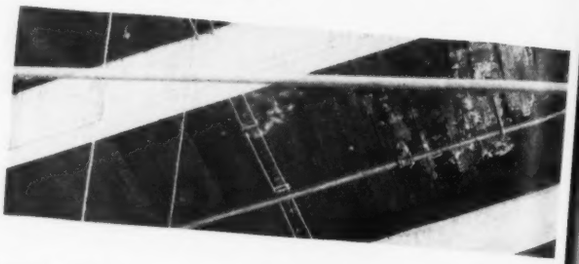
Recognition of the fact that wood-rot is infectious is necessary if certain errors are to be avoided. Even though all the decayed lumber is cleared away before being replaced, there is danger of enough fungi being left around to start the new lumber on the rapid road to destruction. There is a typical record of one weave-shed roof which was replaced after ten years of service with the same type of wood. The new roof lasted less than two years, because there were enough fungi left on the tops of the beams to infect the new lumber.

Combating Decay

Methods of combating wood-rot lie in two directions: The first is to add a toxic product to the wood that curbs the fungi directly; the second is to remove moisture, by heat and/or ventilation, and thus retard growth by depriving the fungi of one of their necessities of life.

Taking up the first of the methods, we find that there are many compounds possessing toxic qualities with which wood can be treated. Four of these compounds, however, dominate in commercial usage at this time. They are: coal-tar creosote; zinc chloride; zinc metarsenite, better known as ZMA; and Wolman Salts. Creosote is an oil-borne preservative, while the other three are water-borne. Each type has certain advantages and disadvantages.

Coal-tar creosote is the most important preservative in point of usage. Its advantages are that it is highly toxic to fungi, and that it also offers a high degree of protection against termites. These insects are commonly called "white ants," although not actually of the ant family. No matter what they are called, there is no question of their destructive ability. The most interesting maneuver of termites is for them to eat their way through the inside of a beam or plant, leaving an exterior shell which appears perfectly sound until it collapses.



The principal disadvantages of creosoted lumber are that it cannot be painted by ordinary methods, that it is somewhat sticky to handle (this topic will be discussed again when methods of treatment are taken up), that it possesses a disagreeable odor when new, and that the treated lumber is more inflammable than untreated (in this connection, however, it is well to recall that creosoted wood is less inflammable than decayed wood).

In general, if the use of treated lumber is indicated, creosoted wood should be used where possible. Obviously it cannot be used for surfaces that must be painted nor for overhead work where condensation drops would stain the cloth. Among the usages in textile plants are: sub-flooring, particularly in dyehouses and other wet spots; basement stringers; and as the upper layer in double-roof construction. The high degrees of humidity in many textile rooms offer excellent conditions for the growth of decay. It has been estimated that the average weave-room roof, constructed of ordinary lumber and without proper precautions to avoid condensation, only lasts from five to twelve years. Local conditions, such as the proximity of a cold-water pipe, also hasten decay.

Zinc chloride is the most commonly used of the water-borne preservatives. The advantages of this compound are that the lumber treated with it can be painted, it gives good resistance to fungi and termites, it is odorless and colorless, and it acts as a fair retardant to fire. One disadvantage of this salt is that it is soluble in water and subject to leaching. It is, therefore, not particularly suitable for outdoor work, where heavy rains would result in lessened potency. Another drawback of lumber treated with zinc chloride is that its structural strength will be reduced if subjected to temperatures above 95° F. for long periods. Most common usages in textile mills are as interior planking for roofs where moisture conditions can cause decay, as sub-flooring, and in other localities which require protection against decay, as well as a paintable surface.

Weave-shed roof (sheathing removed) after nine years of service—Photo courtesy of Associated Factory Mutual Fire Insurance Cos.

A comparatively newcomer, the ZMA method, has already assumed commercial importance. Although patented by the Western Union Telegraph Co., a large number of treating plants have secured licenses to use the process. Excellent resistance to fungi and termites has been displayed by lumber treated with ZMA. Additional advantages are that the product is odorless and colorless, the treated lumber can be painted, and the compound is not readily soluble in water.

Some indication of the resistance to decay and termites of lumber treated with ZMA is given in the report of a government experiment carried out at Panama. Specimens of lumber treated with seventeen different preservatives were placed in service under severe conditions and periodically checked. At the end of 38 months the beams treated with creosote, with ZMA, and with three products not commercially important, were found to be in good condition, while all the others had been destroyed by termites or by decay. ZMA is soluble in weak acids and should not be used where they are encountered. Some uses in textile plants are, in addition to the uses listed above, for window frames and painted exteriors.

Wolman Salts is another comparative newcomer in this country in the preservation of wood. Introduced commercially some ten or twelve years ago, it has recently come to the fore again after a dormant period. This material is a patented compound consisting of sodium fluoride and other chemicals. It has much the same properties as ZMA, but it is claimed that it is not soluble in weak acids.

The method used in treating wood with a preservative is important to the consumer. Many have been discouraged from using creosoted wood by observing railroad ties that fairly ooze, or lumber that has been dipped in the preservative and inadequately dried. As a matter of fact, lumber properly treated with creosote for industrial usage is not particularly sticky.

The cheapest method of treating lumber is to dip the planks in the solution and then dry. The degree of penetration secured is not high and the method is not recommended where the best results are desired. A pressure process gives better penetration of the preservative and better protection. Both creosote and ZMA can be handled by either the so-called "full cell" or the "empty cell" process. Zinc chloride is usually handled by the full-cell process.

The method of impregnating wood by the full-cell process is as follows: The lumber is run into a large cylinder and the entrance sealed; a vacuum is created in the treating cylinder; preservative is admitted without breaking the vacuum and the lumber allowed to absorb as much as possible; pressure of 150 to 190 lb. per sq.in. is applied; a slight vacuum is drawn to prevent dripping when the lumber is removed.

In the empty-cell process there is no initial vacuum and the pressure is applied at once. When the pressure is released, the air trapped in the wood forces out a certain amount of the preservative. A variation of this process is to build up a limited air pressure in the wood before the preservative is admitted, and thus assist the final rejection. A vacuum aids in removing surplus preservative.

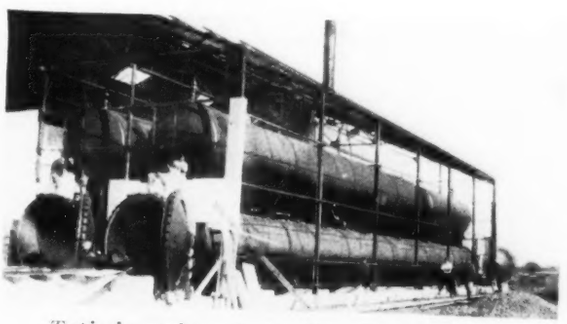
The empty-cell process is used principally for lumber which is destined for industrial use, as it gives deep penetration with low net absorption. With the empty-cell treatment, about 6 to 8 lb. of creosote is left in each cubic foot of lumber (the full-cell process gives up to 24 lb. when needed). The usual custom is to leave 1 lb. of zinc chloride per cubic foot, $\frac{1}{4}$ lb. of ZMA or Wolman Salts.

Hints on Usage

As any process of impregnation injects quantities of oil or water to carry the preservative, it is wise to allow treated lumber to season before using. Some indication of the extent of such seasoning can be gained by that statement that a 2-in. plank should be allowed to dry for three weeks during normal summer weather. Under the circumstances, the best procedure is to have a supply of treated lumber, of the most-used sizes, on hand at all times, so that repairs can be made rapidly. Extensive reconstruction, of course, calls for special planning.

Decay can attack any portion of a beam or plank which is not actually impregnated with a preservative. While it is possible to secure 100% penetration, it is not practical from a cost standpoint; it being deemed sufficient if the preservative penetrates far enough to hinder all normal fungi growth. This means that, where possible, treated lumber should be purchased in the same dimensions in which it will be used, so that the ends will be properly protected.

Where it is found to be necessary to cut a treated plank or beam, the cut end should be treated with the preservative to prevent fungi finding their way up the central, unimpregnated section. The best practice is to have a can of the preservative handy and to paint the cut ends with an ordinary paint brush; three applications, allowing time for absorption, being regarded as sufficient to combat conditions encountered in a textile mill.



Typical wood-treatment plant—lower cylinders hold the lumber; upper chambers are for storage of preservative

Silk Conditioning

BELMONT HOSIERY BORROWS MACHINE FROM SHOE INDUSTRY

AN OFFICIAL of the Belmont Hosiery Co., Belmont, N. H., was worried. Additional sections of full-fashioned hosiery machinery had just been purchased that were equipped with only a cold-water wick for conditioning the silk. The policy of the company had been to purchase raw silk on the open market, send it to a commission throwster, and then knit directly from the cones; but great difficulties were encountered in getting quality of hosiery desired on newer machines.

The percentage of sleazy knitting was high, the official explained, and that cost money if the company's reputation for quality was to be maintained. All sorts of expedients had been tried, even to dumping the cones in a bath in the dyehouse. Such expedients had resulted in too much moisture on the surface of the cone and none in the interior. Backwinding, at a cost of approximately 4c. per pound for labor alone, or the institution of some other expensive method, seemed the only answer.

About this time a salesman dropped in to talk about humidifiers, and the conversation turned to silk conditioning. The salesman suggested that a machine produced by his company for conditioning shoe-leather uppers might be used to condition the silk. Samples were tried and a machine of this type was installed.

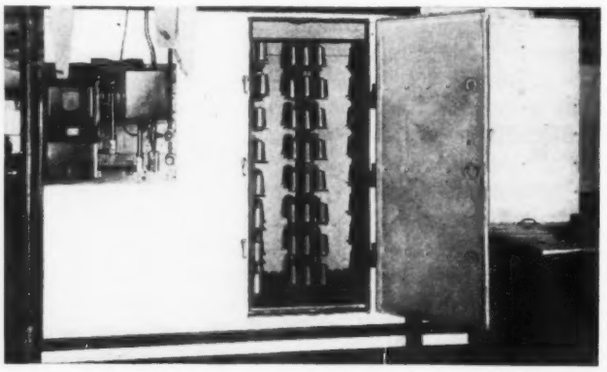
Prior to the installation of the conditioning machine, a twelve weeks' test showed that an average of 17% of production evidenced signs of sleazy knitting—one week even running as high as 74%. With the conditioning machine in use, the percentage has dropped to less than 2%. Cones of silk have been cut in half by the Belmont staff and the penetration of moisture found to be uniform. In addition, the machine has been found useful in conditioning certain lots of mercerized yarn that have been received in a harsh, dry state.

The conditioning machine itself, which is manufactured by the Industrial Dryer Corp., Stamford, Conn., resembles a large, rectangular box and is constructed with double, metal walls allowing a 2-in. air space for insulation. The door is sealed with felt to make the compartment air-tight. A short distance from each end in the interior are perforated partitions, and the floor boards are approximately 9 in. above the base of the machine. The working interior of the particular machine at Belmont is approximately 9 ft. 9 in. x 4 ft. x 6 ft., although larger sizes are available. Beneath the floor boards is a pan containing 4 in. of water, in which is immersed a "fin" type steam radiator approximately 2 ft. square (electric heaters can also be used). Behind the perforated partition at one end of the compartment is a fan driven by an exterior 1-hp. motor.

In operation, the vapor produced by the radiator is drawn along the bottom and upward at the end, forced by the fan through the perforated partition and through the working chamber, and thence through the partition at the other end and down to the bottom to complete the cycle of circulation. By means of exterior instruments the temperature of the compartment is maintained between 90° and 95° F.; and, as there is no leakage, the air is saturated with moisture. The interior is roofed with double felt to prevent condensation drops. Both the process and apparatus are patented.

The advantages claimed are that the water vapor has far greater powers of penetration than has atomized water, thus insuring that the interior of the cones of silk will be properly conditioned; that mildew is not a hazard (one cone was left in the machine for a week); and that the cost of operation is small. In the Belmont installation, no checks have been made on steam consumption, since the item is not important—steam being supplied by a ½-in. pipe and the valve being open an average of only 7 min. each hour. Only other expense is 1-hp. motor.

The cones of yarn are placed on racks outside the machine and the racks then suspended from hooks in the interior chamber. The length of time necessary to condition the silk properly varies from 24 to 40 hours, depending on the type and condition of the silk. The procedure at Belmont is to make tests on the first batch of a new lot of silk placed in the machine and, by weighing, to determine when the silk stops taking up moisture. The time is noted and standardized for the balance of the lot. Production for the size of unit at Belmont is 1,800 lb. per week of 48 working hours.



Silk conditioner installed at Belmont Hosiery Co.

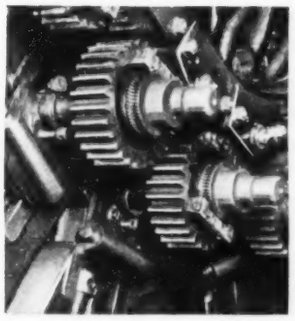
To keep the yarn in condition from the time it is removed from the machine until it is placed in the cabinets of the knitting machines, so-called "holding" boxes are used, which are also manufactured by the Industrial Dryer Corp. It has been found that these trucks not only hold the moisture in the silk, but are fairly efficient conditioners themselves. Belmont has also found another use for the "holding" boxes. When hosiery was extracted after dyeing and allowed to stand some time before drying, the edges dried and caused marks to appear in boarding. Now, whenever there is a lot of extracted hosiery that may stand for a time—such as over the week-end—the baskets are placed in a "holding" truck and the markings avoided. In reality these trucks are a separate development and may find other uses.

In handling silk, the Belmont Hosiery Co. has determined that the savings due to better production and better quality on the knitting machine are sufficient to pay for the conditioner in a short time.

Print-Works Methods

FOR BLEACHING COTTON-RAYON FABRICS

By Ray Cottrell



THERE have been innumerable references in the literature to the difficulties encountered and the steps taken to overcome the problems involved in the dyeing of rayon-mixture fabrics, but comparatively little has been published from the point of view of printing. These dyeing problems were in great part due to the irregularities of yarn manufacture; use of unsaponifiable and insoluble warp-sizing materials; defective weaving; and the choice of unsuitable dyestuffs and dyeing and finishing machinery. These defects, which were all detrimental to the production of a satisfactorily dyed article, were also responsible for similar or corresponding troubles in printing. For instance, the presence of rayon of varying affinity caused shadiness in certain well-covered printed styles, as well as barriness in the dyed shades. Again, the presence of insoluble sizes in a rayon warp was even more troublesome to the printer than to the dyer.

Today it has become the exception rather than the rule to encounter these difficulties in dyeing fabrics containing good-quality rayon. Likewise the corresponding printing troubles have disappeared. There remain, however, several other problems peculiar to the printing of rayon; and modifications of the methods usually employed for cotton fabrics are necessitated by the presence of the synthetic yarns. In this article will be considered the modifications needed in bleaching cotton-rayon fabrics which are to be printed in direct or discharge styles.

Whereas it is possible to dye all but the lightest and brightest of plain shades from a half-bleached or ivory bottom, printed fabrics containing cotton and rayon are, as a rule, expected to have the dazzling white background or brightness of printed effect of the full-bleached cotton fabric, the high degree of penetration obtained with natural silk fabrics, and an unimpaired if not improved softness of handle. Furthermore, distortion of the filling in fabrics to be printed, while equally undesirable in cotton-rayon materials as in the natural-fiber fabrics, is more likely to happen to the former type, due to the loss of strength of rayon when wet and its tendency to slip.

For the bleaching of large quantities of cotton-rayon fabrics for printing the use of hydrogen peroxide is advantageous in that it enables the required degree of whiteness to be obtained in the minimum time with the minimum of handling, and without the use of chemicals with a tendency to harshen the goods and militate against the requirements mentioned above.

A typical procedure for handling cotton-viscose alpacas or other similar plain fabrics in quantity is as follows: After singeing (if necessary) and saturating with a desizing solution, the goods are allowed to steep for 2 to 3 hr., then are washed with hot water in a reel machine and piled into a kier, which is suitably equipped for hydrogen peroxide bleaching. A convenient load to handle is 4,000 lb.; and particular stress is laid on the necessity of exercising extreme care in piling this type of fabric if filling distortion is to be avoided.

Typical of the formulas for bleaching a cotton-rayon alpaca in the kier with hydrogen peroxide is the following: 80 lb. hydrogen peroxide (100 vol.), 100 lb. sodium silicate 76° Tw., 30 lb. soluble pine oil, and 4 lb. magnesium sulphate. The goods are bleached in this solution for 6 hr. at 180° F. (If it is desirable for reasons of economy to recover the spent peroxide liquor, make up to strength and re-use for bleaching subsequent batches, the writer has found that the addition of 25 lb. of borax crystals has a marked stabilizing effect on the hydrogen peroxide.) After rinsing in the kier with hot and cold water in turn, the goods are further washed in a reel machine, scutched, vacuum extracted, and dried on a 90-ft. tenter.

In order to eliminate an occasional tendency of the fabrics under consideration to distort when bleached in the kier, and at the same time to evolve a method capable of handling considerable yardages, the writer experimented with a continuous process involving the use of six reel machines arranged in series. In these experiments the machines were driven at a speed corresponding to a cloth delivery of 45 yd. per minute; and as each machine contained 1,500 yd. the goods were actually in the bleaching process for $3\frac{1}{2}$ hr. ($1\frac{3}{4}$ hr. in hydrogen peroxide). After singeing, if necessary, and steeping in a desizing solution the goods were run into and through the first reel machine, which contained a solution of soluble pine oil and trisodium phosphate. The second, third, and fourth machines contained the peroxide liquor. On account of the much shorter period during which the goods were in actual contact with the bleaching bath, a more concentrated peroxide solution was needed than in the kier method. These machines were fed continuously with fresh hydrogen peroxide liquor from an overhead stock tank. The fifth and sixth machines contained hot and tepid water, respectively. After leaving the last reel machine the goods were scutched and dried as usual.

Our experiments showed that this method permits the fabrics to be processed quicker, and with no tendency toward filling distortion or cockling. In no case, after the method was fairly established, were goods returned on account of poor whites.

[*In subsequent articles the author will discuss the production of direct and discharge styles on cotton-rayon fabrics.*]

Mineral Oil Products...

THEIR APPLICATION IN TEXTILE PROCESSING

IN RECENT years mineral oils and their compounds have found increasing use in the processing of textiles. No statistics are available as to the exact amounts of these products which are employed in various processes, but the total volume consumed annually is probably measured in the millions of gallons. In addition to their low cost as compared with most fixed oils, mineral oils as a class have certain characteristics which are desirable in a textile lubricant, softener, etc. On the contrary, many of the petroleum products have other properties which militate against their use in this connection.

Unfortunately best judgment has not always been exercised in the selection of mineral oils for specific purposes; and in the past, at least, the use of these materials has not proved an unmixed blessing to the textile industry. While there has been some investigation of the properties of mineral oils in their relation to textile processing, and considerable progress has been made in the choice, blending, and compounding of these materials, a great deal of work remains to be done along these lines. In this article will be discussed briefly some of the types, uses, and properties of various petroleum products which find use in textile processing. Also will be suggested a few of the fields in which further research is necessary. Present knowledge does not permit an authoritative comparison of the various types of mineral oils with one another or with fixed oils or other materials; and this will not be attempted.

Classification of the Oils

Mineral-oil products applied to textiles can, in general, be classified as follows: (1) straight mineral oils; (2) mineral oils blended with fixed oils; (3) water-miscible compounds of mineral oils (either alone or blended with fixed oils) with sulphonated oils or other emulsifying agents; and (4) mineral-oil sulphonates.

Straight mineral oils and blends of these materials with fixed oils are employed for oiling raw cotton, wool stock, rayon, knitting yarns, etc. Applications of the water-miscible compounds are in the oiling of wool and knitting yarns, soaking of raw silk, warp sizing, finishing of hosiery and other textiles, etc.

In general the mineral oils employed in textile processing have good lubricating and softening properties and impart a clinging power to the fibers. They also possess the advantages that they are low in acid content and do not tend to oxidize readily. A disadvantage of the mineral oils as a class is that they are more difficult to remove from the fiber by the usual scouring methods than are the fixed oils. Because of this, the use of mineral oil in certain textile processes—particularly when employed in relatively large quantities—has led to oil stains, uneven dyeing, and similar defects. It is most important, therefore, that those oils be selected which combine with other desirable characteristics ease of rinsibility and no tendency toward staining. In the case of the water-miscible preparations, it is essential, further, that they be properly compounded.

Within recent years investigations in this country and in Europe have disclosed some of the factors which influence the stability of water-miscible mineral-oil preparations and which govern the ease with which straight and blended oils can be removed from the fiber. Likewise more efficient scouring methods have been evolved.

One of the latest developments in the utilization of petroleum products in the textile industry has been the introduction of the mineral-oil sulphonates. Thus far little has been published in reference to these materials, although they are finding application in a number of textile processes.

The mineral-oil sulphonates are said to be soluble in water; have good emulsifying power; and are resistant to weak acids, alkalis, and calcium and magnesium salts. In some respects, therefore, the properties and uses of the mineral-oil sulphonates are similar to those of other types of sulphonated compounds employed in the textile industry. For example, they can be employed in place of other emulsifying agents to form water-miscible mineral-oil preparations of the general type mentioned above.

Extensive research, both by the suppliers of mineral-oil products and by the textile industry, should result in a more rational use of these materials and at the same time should minimize the difficulties which have been encountered in the past. Lines along which these investigations might well be made include the following: (1) further study to determine the oils, blends, and compounds best suited for specific purposes; (2) comparison of results obtained in various operations with mineral-oil products and other classes of material; (3) improvement of methods for applying various types of petroleum products; (4) development of tests for evaluating the suitability and efficiency of these materials; and (5) perfection of scouring methods for textiles to which mineral-oil products have been applied.

Wage Readjustments

CREATE NEW DIFFICULTIES IN SETTING PARITIES

From Textile World's Southern Office

THAT the wage situation in cotton mills is in a state of confusion has been demonstrated by the number of strikes precipitated in the last few weeks. The promptness with which most of these strikes have been settled, however, indicates the willingness of both employers and employees to arrive at a fair adjustment of their differences. Wage advances have been general in all branches of the industry during the last three months, but there are still disparities because of varying percentages and number of advances.

More recently there has been some apprehension that the establishment of minimum wages for unskilled labor in cotton mills will have the effect ultimately of reducing wages of skilled operatives. The comments of leading manufacturers with whom this point has been discussed, however, indicate but slim chance that any mill will attempt to close the gap between the level of skilled and unskilled wages.

Several studies of wage levels and costs of living have been undertaken since it was first intimated that a minimum wage would be established. Previous surveys help in making comparisons of wage levels. An interesting report by the North Carolina Department of Labor, covering a survey of payrolls in 80 cotton mills in the State, employing 16,942 operatives, during August, September and October, 1932, showed an average weekly wage of $11.08, with about 80% full-time employment. This study revealed average weekly wages from $8.39 in yarn mills to $14.15 in bedspread and tapestry plants, the salaries of superintendents, overseers, office workers and executives being excluded.

The question of wage differentials as between New England and the South has been revived and the disparity in the cash wage for cotton mill workers has been considered in the minimum wage of $12 for the South and $13 for New England. Southern manufacturers insist that they are entitled to a fair difference in the base wage because (1) the cost of living is relatively lower in the South, as the result of milder climate and the decentralized location of industrial plants, and (2) the cost of manufacturing goods includes as an indirect labor cost the expenditures for village maintenance and operation, the so-called "wage equivalents," such as house rent and fuel at nominal charge, free water and lights, medical attention and recreational advantages.

Statement recently issued by Major A. L. Fletcher, State Commissioner of Labor, Raleigh, N. C., included the following comment:

"It should be pointed out, also, that practically all of the cotton mills of North Carolina own their own mill villages and furnish their employees houses, lights and water at a very low rate. This results in a material reduction in the cost of living for the workers and should be taken into consideration in arriving at the average weekly wage. This, however, was not done in the survey, as it would have required a more detailed and more costly survey than the Department of Labor, with its limited personnel and appropriation, could make.

"Because low rents and low water and light charges provided by southern mills are not taken into consideration, wage comparisons between northern and southern mills rarely are fair to southern industry and lead to misunderstanding. Since these things materially lower the cost of living, they have the same effect as higher wages would have if these things were not furnished."

Figures compiled by the Bureau of Labor Statistics, U.S. Department of Labor, for April of this year, show average earnings of workers, both skilled and unskilled, in the cotton textile industry of the entire country, were 21.4c. per hour, with an average weekly wage of $9.63, based upon 45 hours actually worked per week. Applying this hourly rate to a 40-hour week, the average weekly wage would have been $8.56, or about 30% less than the minimum wage of $12 recommended for the South, and the minimum wage is of course lower than an average wage. Comparative figures for Massachusetts and North Carolina, taken as examples of the differences between New England and the South, show that weavers worked an average of 45.6 hours per week in Massachusetts and received an average wage of $16.67, while in North Carolina they worked 45.7 hours and received $13.62. Reduced to the average earnings per hour, it was found that weavers received 22.6% higher cash wages in Massachusetts than in North Carolina. Here, again, the importance of "wage equivalents" must be considered in arriving at a fair comparison.

Another interesting phase of the labor question, and one that may have far-reaching significance in the administration of the National Industrial Recovery Act, is the inquiry into machine loads requested by Senator Byrnes, of South Carolina, who has described the "stretch-out system" as a "running sore, which is a constant source of controversy between worker and manufacturer."

The investigation committee, which must report to General Johnson and his aides by July 15, is composed of Robert W. Bruere, of New York, former head of the Bureau of Industrial Research, chairman; B. E. Geer, former president of the American Cotton Manufacturers Association; and Major George L. Berry, president of the Printing Pressmen's Union.

THIS DEPARTMENT—

offers a new subject for discussion each month and gives readers' comments on problems introduced in previous issues. The subject opened in May is closed and a summary of contributed ideas is given on opposite page. Overseers and others are invited to discuss the subject presented under the heading "Fairest Basis for Wage Increase" and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

▼

Overseers'

THE FAIREST BASIS FOR

"IS THAT the movie section of the newspaper you're reading, Joe?" Superintendent Chase asked jokingly. "The rest of us are all set for the serious business of an overseers' meeting."

"I'll admit," said Joe, looking up, "that I've been in a sort of fog, but it so happens that this paper is more than a month old, and I just picked it up when I came in to pass the time until the rest of the gang gathered. However, two bits of news side by side caught my eye. One says that a certain mill raised wages 10%. The other says that another mill raised wages on a sliding scale of from 5 to 10%. I got to thinking about which is the better plan—and I'm still thinking."

"We might well discuss that today, Joe," Superintendent Chase answered. "Of course the immediate problem for many mills is how to deal with the increase in wages due to the establishment of a minimum wage for the lowest-paid workers. However, let's look at it broadly. Most everyone hopes that, as time goes on and business improves, wages and salaries will increase. This minimum wage business is only one form of the problem, so let's put it this way: What is the fairest way to put through an increase in compensation for workers, overseers, superintendents, and others in a textile mill?"

"Leaving out the high-salaried birds who could stand the pressure a little better and may have gotten bigger cuts," said Bill, "most of the mills put wages down on a percentage basis, and it is only fair to put them back the same way. If you start fooling around and saying that certain workers or overseers are going to be advanced only 5%, while others are advanced 15%, you will stir up a lot of jealousy and trouble. Whether you work on hourly, weekly, or monthly pay, you are going to be sore if anyone

Discussing National Problems

Editor, Overseers' Round-Table:

In the discussion of local and national problems among groups whose interests are the same in the long run, but often conflicting at the moment, the antagonizing of one group or the other is inevitable. When two groups are as closely inter-related as capital and labor, care must be exercised by the spokesmen of both factions that they do not antagonize the other.

The presentation of one side of a question by any group is a dangerous business. There are very few things which must affect many people that are *all* wrong or *all* right. There are very few Congressional bills which are absolutely condemnable in every part, and on the other hand, there is a corresponding dearth of bills which are *entirely* commendable. For these reasons we have found that we can accomplish more by being fair in discussing our business opinions with our employees. With us it is not a question of the desirability or undesirability of the discussion of national problems, but rather a decision as to the better method of their presentation. We firmly believe that we have found the solution.

We do not take a definite stand on any current issues. We encourage our employees to think for themselves. When presenting information on our bulletin boards which tends to show one side of a question, we do our utmost to fairly present information which states the point of view of the opposition. We do not recommend books, pamphlets or lectures presenting the arguments which we consider right without also recommending books, pamphlets and lectures taken from reliable authorities which will adequately defend the arguments with which, upon the whole, we disagree. And, we go so far as to permit anyone, at any time, to put notices and information of any nature on the bulletin board. Thus we make discussion a group affair without any antagonism. In short, we have sufficient confidence in the innately good sense of our men to trust them to work out their own decisions after they have fairly heard both sides and have judiciously weighed the evidence.

FRED BENNETT.

Editor, Overseers' Round-Table:

There are some ideas so theoretically sound that it seems almost incapable of belief that in practice they fail miserably. Yet such is the case, and unfortunately for all concerned, Pete's idea of educating the worker along social and economic lines comes under this classification.

It seems to be a characteristic of the American worker to resent any form of guidance, however well-intentioned, unless it comes from a political party to which he is attracted. It certainly is a fact that he views with a certain amount of suspicion any effort of his employer to interest him in studying proposed legislation that may in the long run be prejudicial to the industry he is connected with, and directly harmful to his own status as a wage-earner. I have seen this illustrated in any number of instances, and in all cases the workman suffered from his apathy.

Therefore, in my opinion, management would be well advised to leave the matter of the worker's economic education strictly alone. If the concern should possess a shop library, however, economic instruction can be fostered in an indirect manner through the stocking of literature on the subject.

ROBERT S. ALEXANDER.

Editor, Overseers' Round-Table:

The question of whether or not to educate workers on economic and social problems is not really the matter on trial. The present day conditions make it almost mandatory to do so for the continuance or relief of the industry, workers and the public at large, so that it is just a problem of deciding on the proper method adaptable to the concern. This matter is a very delicate one and should be handled with the utmost care and tact.

One method whereby pamphlets are printed and distributed among the workers explaining fully the various legislative proposals and their probable effects upon

Round-Table

WAGE INCREASE

else is raised more than you are. Also, if you work in one department on piece-rate you hate to see workers in another department raised a higher percentage. All told, there is less trouble if you raise everyone in proportion."

"This is all pretty complicated," Pete replied, "but I'll try to be as brief as possible. In the first place, we should give a break to the workers who earn so little that they can just drag along on the bottom. In the second place, there was not a great deal of attention paid to the problem of how much anyone should be paid to do a certain job in a certain way back in the days of prosperity. Things just sort-of drifted along. Consequently, when cuts were made, the underpaid were reduced the same percentage as the overpaid. Even in cases where there was an attempt made to even things out on the way down, certain inequalities were overlooked. In view of what I have just said, I believe that the lowest-paid workers should be given more of an increase first, and that after that any raises in wages or salaries should be based on what the job is worth, and on whether the individual performs that job in a good, bad, or indifferent fashion. As far as piece-rates are concerned, individual skill gets its reward; but there is still the problem of what the job is worth in comparison with piece-rates in other departments."

► **Do *you* believe in giving pay increases to workers, overseers, etc., on a flat percentage basis, or in giving increases based on the particular job and the way in which the individual performs it?**

the community may prove successful. It would be well also, previous to distributing pamphlets, to issue bulletins explaining the plan, for the purpose of allaying suspicion and preparing the workers so they will be in a receptive mind. The whole program can be a success or a failure according to the initial start. A spirit of cooperation and helpfulness should be manifest.

No condemnation is made of the open lecture or bulletin board program, but it has been found that the average worker is rather shy or embarrassed in discussing a subject in large gatherings. Bulletin boards do not receive the serious attention and thought on matters that they should.

CARL L. EMERSON.
Mt. Hope Finishing Co.

Editor, Overseers' Round-Table:

The question of whether or not a policy should be adopted with respect to open discussion of national and state problems with the employees is a broad subject. My answer is that such a policy should be adopted, and that the overseer is the man to handle the discussion, for it is he who comes in daily contact with the employees and, therefore, understands their point of view. He should be able to go to each of his men and discuss any state or national problem, and if the overseer shows that he has the welfare of the operatives at heart, nine times out of ten they will listen to what he has to say and follow his advice. Let the worker understand that the overseer has the interest of both the company and the employees at stake.

A. B.B.

Editor, Overseers' Round-Table:

Regarding educating the workers on economic and social problems, I say hands off as far as the company is concerned. Our brainiest and best educated men have not been able, so far, to put across what they think is best for our country. Although it now looks like something will be accomplished along this line. There never was a time when the workers were better informed on economic and social questions than they are now. With the radio and cheap literature, the working class is much better posted on world conditions than ever before. There never was a time when we had better schools.

I think our educational system is greatly to blame for some of our troubles. They have failed to instill in the young people, strict honesty and brotherly love. A recent graduate from one of our high schools told me there were very few in her class that did not cheat on final exams and tests.

I know of one organization that emphasizes right living and brotherly love to all its key-men and expects that their influence will be along this line in daily contact with the employees. I have known this company for thirty years and during that time they haven't had any labor troubles. I have watched the quotations of their stock and there are few that have dropped less during this depression.

S. S. R.

Editor, Overseers' Round-Table:

I most heartily endorse Pete's idea of carrying on a regular program of education which would keep the workers informed on the social and economic problems that confront them and their employer. Many workers do not thoroughly understand these problems and are thus easily led astray by radical labor agitators when, if they understood the facts, they would stand by their company loyally. My idea would be to carry on a regular program, post all interesting items on the bulletin board, and call a mass meeting from time to time when some executive that was qualified for the task would address the workers and then throw the meeting into open discussion.

JOHN.

SUMMARY

DISCUSSING NATIONAL PROBLEMS. *Opinions differed widely as to the advisability of following any definite policy of educating mill workers on economic and social problems. Approximately 58% of the letters favored some plan for presenting current facts to the workers, some advocating the distribution of pamphlets and other literature, while others endorsed the mass meeting as the proper method. It was stressed that the company should be careful not to create the impression that it was trying to force its opinions upon the workers. About 42% of the replies were opposed to any program of educating the workers on national and local problems, declaring that manufacturers should not attempt to meddle into the political and social life of their employees.*

QUESTIONS AND ANSWERS

Cost of Weaving Labels

Technical Editor:

Could you advise us of the customary method used in calculating woven labels?

The ground filling and warp always remain the same in every way. The figures do not; that is, their length and width vary according to design. These are sold at a certain price per color, the figures being called colors, the ground filling not counting as a color. As orders are received, the cards are changed to the pattern desired. This happens quite often, as the majority of orders received are small, causing the variation in the figures and the yarn used in them.

What we would like to know is, how is the yarn generally figured by the trade to arrive at a definite cost? To dissect each different label is a difficult, tedious task; and we believe an average is struck for the entire length of warp in calculating the figures. (7985)

The only accurate method of arriving at the cost of the extra (that is, the figure) filling yarn is to determine first the average number of picks per inch and the average length of each pick. The average number of picks per inch is determined by counting the actual number of extra filling picks per label and dividing this number by the length of the label in inches.

The average length of the extra filling picks is found by dividing the actual length in inches of the extra filling found in each label by the actual extra filling picks per label and multiplying by the denomination (that is, the fractional part of an inch) into which it is desired to have the result converted.

For example: Given a label $1\frac{7}{8}$ in. long with 152 figure picks the total length of which (extracted) is 68 in.

$152 \div 1\frac{7}{8} = 81$ average picks per inch.

$(68 \div 152) \times 16 = \frac{7}{16}$ in. (plus) average length of figure picks.

As you point out, however, this is often a tedious task. Therefore, some concerns divide their products into separate classes and assign an arbitrary average number of picks and average length of pick for each class. This method seems to work out quite satisfactorily under normal conditions. It will be readily understood, however, that even in such classes some labels will benefit at the expense of others; and with business conditions as they are at present, the order is most likely to be given to the concern that is figuring its costs the closest.

▼

Streaks on Sewing Thread

Technical Editor:

We are sending you a couple of spools of sewing thread which show brown streaks on the surface. Will you be kind enough to let us know what causes this defect. (7982)

The streaks can be removed by washing, indicating that they are not guide burns, grease stains from a dirty twister, or oil stains from swift spindles. Also the stains are not iron rust. It appears, therefore, that the discoloration occurred in the bleaching process and that the trouble is probably due to dirty water-supply pipes. Certain sources of water cause a deposit or incrustation of a brownish substance in the inside of pipes. This incrustation is loosened, carried through the pipe by the force of the water, and gets on the yarn. Often the last wash leaves these deposits. In a small town this occurs frequently after the fire department has attended a fire or a hose practice. We believe that if you will tie several layers of muslin over the water pipe, you will find from what is collected that the trouble is in the water. If the muslin shows no stains, you should investigate the finishing operation, as an improperly mixed softening solution, or a softener thrown out of solution by hard water, may cause stains of somewhat the same appearance.

▼

Robe Fringes

Can you give us some information as to how to fringe motor robes and similar blankets with a self fringe, the work to be done by hand? (8003)

After starting the warp in the loom, weave in the regular way about 12 in. or less of the fabric for heading. For this purpose, to save money, use odd lots of filling, being careful, however, that it has the same felting qualities and other properties as the regular filling. This should give a heading of suitable length for all finishing purposes.

Next draw the warp say 7 or 8 in. for fringe, the length depending on the length of fringe wanted. Begin weaving the first robe in the regular way. Repeat this process at the end of every robe woven. Weave a heading as just described when the cut of robes is completed in the loom.

As soon as the cut of robes has been removed from the loom, take the fringe, or that part of the robe with the drawn warp, and stretch it over the twisting frame, which consists of two parallel bars spaced about 24 in. apart. If a twisting frame is not to be employed, the fringe may be placed between the knees of the person who is to do the twisting of the fringe.

The size or fineness of the fringe depends largely upon the number of ends of warp twisted together. The size of the warp yarn in the fabric is also a factor. Taking as a basis $1\frac{1}{4}$-run warp yarn, twelve ends to each tassel or unit of the fringe is about the right proportion for the average robe.

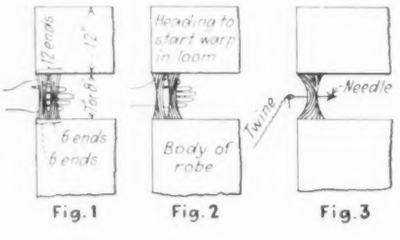


Fig. 1 Fig. 2 Fig. 3

The person doing the fringe twisting takes twelve warp ends and lays them in the palm of the left hand evenly separated, six ends to a strand (Fig. 1). Laying the right hand over the two strands, she rolls or twists them toward the body (Fig. 2). After this operation, she places the two strands together (taking care that the twist is not loosened) and rolls or twists them in the opposite direction (Fig. 3).

At this point and without letting the twist slip out, she takes a bale needle and, using twine (18 B C wrapping), inserts the needle in the center of the twisted strand (Fig. 3). She ties the twine to the first twisted strand and allows the twine to thread loosely to the next twisted strand, and so on full across the fringe. This twine is to remain in the robe until all finishing operations are complete.

The operation described makes a double-and-twist fringe. The twine holds the twisted strands in place through the finishing operations; and after the robes have been fulled or scoured, the fringe is felted in place permanently. After the final finishing operation the twine is pulled out and the fringe cut on the twine line.

Some robes are made with a single twist to the fringe, but this is not so satisfactory from a fraying-out basis as the double-and-twist fringe. The single-twist fringe is now made by a twisting machine.

The cost of the hand work in making a double-and-twist fringe is not heavy. On the basis of $1\frac{1}{4}$-run warp and twelve threads each to the fringe, the average girl should twist a row in 15 min. or should average four rows per hour.

▼

Red Spots on Hosiery

Technical Editor:

We are enclosing herewith a full-fashioned stocking which shows several red spots. Will you kindly examine the stocking and let us know what is responsible for this defect? (7951)

With the scant information given in the inquiry, it is difficult to determine the cause of the defect. The red spots are of irregular shape and size, and appear all over the stocking. It would be interesting to know if the whole lot is damaged, or if only a few pairs or dozens are spotted.

The spots may have been caused by mold, the goods having been allowed to lie too long a time in the bin before boarding. In this case, the boarder should have detected the mold by the odor of the goods. The truck containing this lot may have been left near a machine in which a brown shade was being dyed, and the lot splashed with liquor from this machine. In this event, the operator should have noticed and reported the damage. The bath in which this lot was finished may have broken down, impregnating the lot with grease particles. When the stockings were put on the boards to dry, the heat could have caused the grease to spread and dry on the stockings, thus causing the spots. If this is a single occurrence, the processing of

QUESTIONS AND ANSWERS

this lot was at fault; but if these spots appear on many lots, the finishing bath should be checked and modified. Examination of the bath before the goods are removed from the machine will show whether or not this is the source of the damage. If the bath has broken down, the damaging element will be seen floating in the bath, and the goods can be cleaned before the lot is sent to the boarding room.

▼

Throwsters' Waste Bags

Technical Editor:

Please advise us as to what general type of material is best for the inside of waste bags which are to be used in a throwing department? (8020)

A rough material or something in the order of a cheap plush holds the waste and prevents it being drawn out of the bag when the hand is removed.

▼

Warp Streaks in Rayon Fabric

Technical Editor:

We are enclosing herewith a sample swatch which shows a warp streak on each side of the cut—one about 4 in. from one edge and the other about 4½ in. from the other edge. This is regular rayon sable, 135x72, 100-denier, 50/55 turns. We have temples on our looms, but they hold only about 3 in. of the cloth on the side. We shall appreciate your advice as to the cause of these streaks. (8008)

We believe that these warp streaks are traceable to your temples, and advise you to examine the temple rolls. If the rolls do not rotate freely, they cause the warp to pull together on each side of the temples. Again, see that the rolls are of the proper hand, that is, one left and one right, as many times the temples are put on without examination of the rolls to make certain that they are of the proper hand. Make sure, also, that your temples are perfectly straight; that is, not higher in the front. If temples are higher in the front, the warp ends are pulled from the sides to the center.

▼

Knit Goods Are Shaded

Technical Editor:

We are enclosing a small end of 32-oz. knitted fleece overcoating. The examiners state that the pieces are shaded from side to center and that the material is napped and sheared unevenly. We have gone over our equipment carefully in both the wet-finishing and dry-finishing departments. We have also had some of these pieces returned and have been unable to notice any such shadiness, although they were rejected by the examiners. The materials are made of uniform mixes. It is our opinion that after a piece of cloth is sheared and examined, it should be put on a steam brushing machine and rolled for shipment. This treatment should brush down any long

fibers which might stand out and give the cloth the appearance of being unevenly sheared or napped; also it would eliminate any crease or fold marks. We should like your opinions as to what means we should take to overcome these difficulties. (7975)

In the case of a knitted fabric, a shaded side to-center condition usually can be traced to the processes of flat steaming or sponging, to improper fulling and scouring, or to uneven napping. The amount of alkali and soap used is a factor to be taken into consideration. We believe that on this class of work, 4 oz. of a good soap, 2½ oz. of alkali, and about ½ oz. of a good solvent to 1 gal. will suffice for both fulling and scouring. Since mixtures of this description may turn blotchy and cloudy if allowed to stand too long after fulling, it is well to scour as soon as possible. An excess of alkali will not help matters either in the fulling or scouring, and should be guarded against.

Upon examining the piece, we found that the center was napped a trifle more than the sides. This condition will give an uneven appearance; and no amount of steam brushing will remedy this until the napping is evenly done. Steam brushing after final shearing will help to lay the fibers evenly and to produce a more even effect than is obtained if the goods go directly to the perch from the shear. If you will examine your goods thoroughly before napping, to determine whether or not they are level, you should be able to reach the root of your trouble.

We recently heard of an instance where a manufacturer shipped goods of the same construction and character as the sample submitted, and was surprised to find that the sponging caused the sides to appear darker than the center. While this may not be true in your case, it is well to check on the sponging or shrinking of this type of fabric.

▼

Streaks in Knitted Zephyr

Technical Editor:

The enclosed sample of knitted zephyr, you will note, is uneven. The zephyr was dyed in skein form with acid colors, and wound on cones, without showing any unevenness. However, when knitted, the cloth was streaky. Our customer has blamed us for uneven dyeing. We shall appreciate your advice as to the cause of this streaky condition; and if due to the dyeing, how it can be avoided. (7981)

It is our opinion the yarn is as evenly dyed as can be expected for this particular shade of green. Examination of the fabric under the microscope discloses that what appear to be streaks to the naked eye are gray effects. Apparently the fibers have not absorbed the usual amount of dyestuff. We do not believe that this is the fault of the dyeing. It is our opinion, rather, that it is due to the condition of some of the fibers. At times dead wool will cause this condition; also strong alkali coming in contact with the fibers in some operation prior to dyeing. Faulty knitting will produce barré effects, but in our opinion this is not the trouble.

▼

Sleazy Knitting in Welt

Technical Editor:

Enclosed please find some stockings with a very bad condition in the welt. I want to draw your particular attention to the concentrated sleazy condition which runs through the welt in a vein-like manner. May I have your opinion as to the cause? (7974)

Samples submitted show in a very noticeable way a condition of sleazy knitting. It is not always an easy matter to determine definitely the cause of sleazy knitting. The most usual cause is dry silk, but sleaziness can be caused by silk being too wet just as well as too dry. It can be caused by either too dry or too wet an atmosphere in the knitting room. It can also be caused by different natures of silk being introduced to the knitting machine without their natures having been discovered and corrected before they are applied to the machine. Improper adjustment of the machine and knitting too loosely are other causes. All of this means that the trouble will have to be corrected in your own plant by your own efforts after thorough checking on all the different causes of sleazy knitting.

In the samples submitted we are inclined to the opinion that the trouble has been caused by silk being too dry and by knitting a little too loosely in the welt. It is possible that the trouble could be considerably overcome by some additional weight on the take-up roller during the knitting operation of the hem.

While sleazy knitting is purely a knitting-room trouble, sleazy fabric can be greatly improved in the dyeing and finishing processes. If you are not doing so, we advise that you enter your goods into a boiling bath. If you are using the so-called single-bath method of dyeing and degumming in one operation, be sure that the bath is absolutely boiling when the dry goods are entered, and enter as rapidly as possible. If you are using the two-bath method, or degumming and then dyeing, be sure that the degumming bath is boiling before the goods are entered. This treatment alone has a strong tendency toward minimizing sleazy knitting. Then, with some proper aftertreatments or finishing agents, the fabric can be further improved. Often a bad knitting-room job can be turned into a very satisfactory finished job. We do not mean by this that the knitting room should not be held responsible for sleazy knitting and cannot largely overcome the trouble with the proper follow-up.

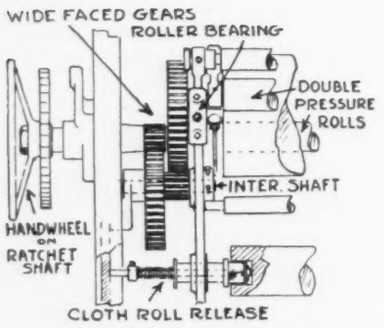
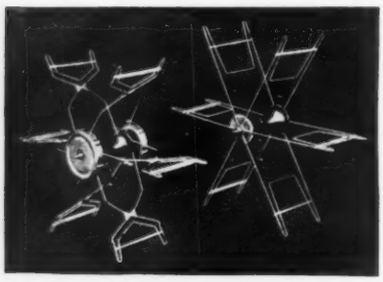


Fig. 1

Silk and Rayon Loom

SEVERAL new features have been added by the Crompton & Knowles Loom Works, Worcester, Mass., to the "Super" silk and rayon loom, which is the first 2x1-box loom to change shuttles automatically. A handwheel, which is easily removed at the time of changing pick wheels, has been applied to the ratchet shaft of the take-up mechanism, as shown in Fig. 1, in order to prevent the weaver from soiling her hands; and a new cloth-roll release mechanism has been adopted with the same object in view. The take-up gear train has been refined to eliminate backlash. A double pressure roll can be applied to the take-up drum at the option of the mill.

An angle-iron breast beam has replaced the former wooden beam. As shown in Fig. 2, a wooden strip is applied to the front corner of the breast beam, and between the wooden strip and the back edge is a wide strip of Masonite, both protecting the cloth from contact with the metal. To strengthen the frame and to support the crankshaft more adequately, an angle-iron back girt, shown in Fig. 3, is provided to support two crankshaft bearings. The shuttle-changing mechanism has been simplified, and it is said to handle the shuttle gently without any damaging effect, affording a shuttle life equivalent to that on non-automatic looms. It does not require slowing down or stopping of the loom at the time of transfer.



Light-Weight Swifts

SIPP-EASTWOOD CORP., Paterson, N. J., has developed two new light-weight swifts which are said to offer more convenient operation and permit higher winding speeds. Known as the "Seco" adjustable wire swift and the "Seco" fixed wire swift, they are designed to avoid the weaknesses of old type wood swifts, and are said to keep skeins running smoothly and in perfect balance. It is claimed that they eliminate the wood sticks coming loose, trouble from hubs and sticks splitting and breaking, as formerly experienced with old type wood swifts. The new swifts are made of rust-proof steel, with six to nine arms, in various sizes to hold either rayon or raw silk skeins. The adjustable swift may be regulated to keep the skein tight at all times. Centrifugal force keeps the arms extended and automatically takes up the slack in the skein.

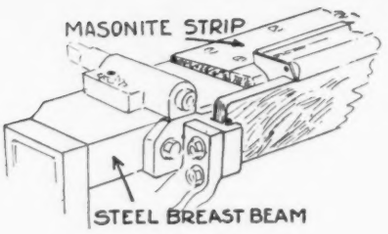


Fig. 2

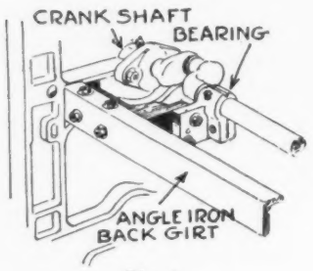


Fig. 3

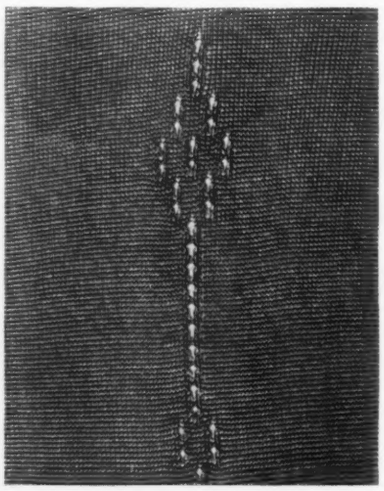
Full-Fashioned Welt Joiner

ELIMINATION of the skill normally required for turning and joining the welts of full-fashioned hosiery is one purpose of a recent invention by Joseph Haines, Jr., president of Haines Hosiery Mills, Inc., Nicetown, Philadelphia. The use of this invention, it is asserted, permits inexperienced persons to become quickly adept in turning welts. It also saves time, as the manual labor is accomplished during the knitting of the welt fabric, leaving only a few seconds required for the actual joining of all the welts on the machine, as against the usual 4 to 7 min. The device is being built by the Textile Machine Works, Reading, Pa., but the marketing is under the direction of Mr. Haines, who controls the patent—No. 1,821,154.

The invention utilizes the narrowing mechanism for doing the actual joining. The hooks of the welt bars are equipped with latches somewhat similar to those of latch needles, except that they project slightly beyond the curve of the hooks. Before the knitting of the leg blank is begun, the welt bars are placed in one of several special latch-opening devices mounted on the frame of the machine. The projection of the latches beyond the hooks makes the operation of opening them comparatively simple. The welt bars are then placed in their guides on the top bed rail and slid inward between the needles to receive the first course of loops.

Before the welt fabric has been completed and while the machine is still in operation, the welt bars are detached from their straps by the operator and mounted on the frame of the narrowing mechanism. Special lugs and stud pins insure this operation being accurate, and the moving of a small handle operating a clamp secures the welt bar firmly in place. Tension is maintained on the fabric by means of a weighted spring strap and a bracket with hooks attached (similar to the tension strap used on footers). When the welt bar has been secured to the narrowing frame, the regular welt rod is inserted and again attached to the roller tension straps. The special weighted strap is then applied to the next stocking.

When the welt fabric is completed, the operator shifts a handle located about on a level with the main camshaft, which serves to counteract one of the two low places on the narrowing cams, thus eliminating one of the two dips ordinarily given the narrowing frame during the otherwise normal narrowing operation. The machine is then run for one revolution of the camshaft, the welt hook descending to conjunction with the knitting needles exactly as in the regular fashioning operation for returning the transferred loops to the needles. Since, in the manual act of applying the welt bars to the narrowing frame, the loops have slipped above the latches of the hooks, they now slip over the latches and leave the hooks in the same manner that they leave the points in narrowing.



Transferred-Eyelet Clocks on Circular Hosiery

PARIS clocks having open eyelets and said to have no weakness of stitch are being produced by a new attachment for circular-hosiery machines developed by Scott & Williams, Inc., 366 Broadway, New York. The attachment employs transfer bits similar to those used in the transfer dial, but mounted in the sinker dial. A cam at the front of the machine, controlled by a pattern drum, selects those transfer bits which are to be operated on each course and pushes them in between two needles. At the throat plate the yarn passes over the tops of the bits, which remain raised while the needles are lowered, thus producing a long loop. At the transfer point, two needles are raised between the two points of each transfer bit; and the bits are withdrawn by another cam, allowing the long loop to span two needles.

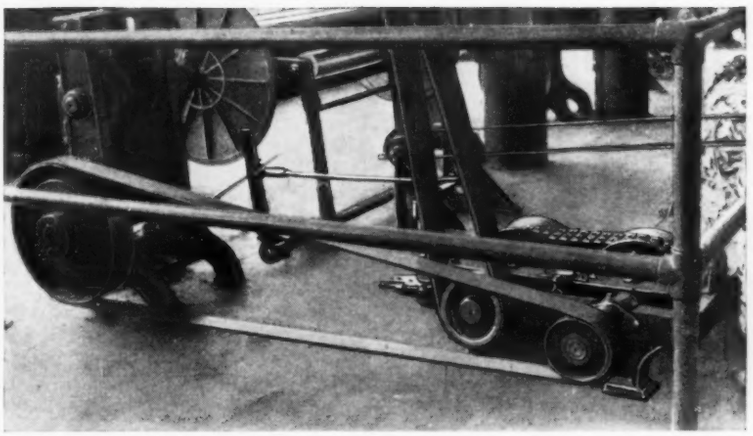
A machine on demonstration at the Scott

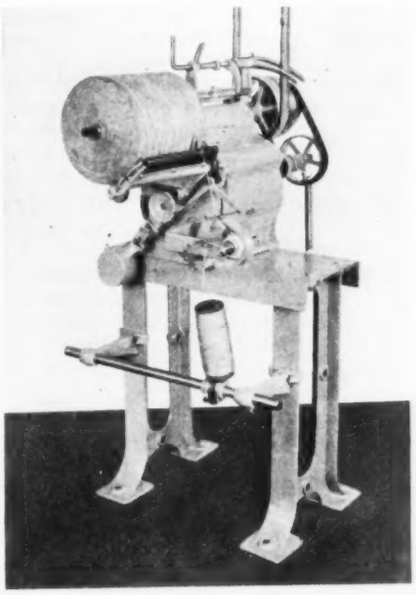
& Williams office is equipped for producing the clocks in three steps. The butt of each transfer bit extends from the sinker dial at one of three levels; and the selector cam is raised to the required level when one or more eyelets are desired in a course. The raising of the cam is accomplished by the pattern drum, which carries three heights of jacks arranged in whatever order is required for the pattern. In the case of the stocking illustrated herewith the cycle of transfer-bit action for any horizontal set of eyelets occurs on two consecutive courses, and two courses of plain are knitted before the next horizontal set of eyelets is begun.

Two-Speed Spinning

INCREASED production is the primary purpose in a two-speed motor drive for spinning frames recently developed by the Whitin Machine Works, Whitinsville, Mass., working in cooperation with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. In the case of a constant-speed drive, the speed of the frame must be set low enough to allow for the maximum yarn tension at the beginning of the doff. With the new W-W drive, the starting speed is set slightly less than usual for the first 20% of the doff (in order to reduce end breakage) and then is automatically increased 10 to 15% above the constant speed commonly employed. At the end of the doff the control mechanism is reset automatically by the winding back of the builder. The drive is applicable to both warp and filling wind.

The change from low to high speed is accomplished by a limit switch mounted on the builder lever of the spinning frame, which is operated by a dog connected to the filling arm. This switch serves to connect the rotor windings of the motor to a resistance when slow speed is wanted, and to short-circuit the resistance when high speed is wanted. Fig. 1 shows the position of the switch on a combination builder (set for filling wind) at the beginning of a doff, and Fig. 2 shows the position at the end of the doff. Any a-c. wound-rotor induction motor for constant and variable speed can be employed in the drive. A special magnetic starter serves to start and stop the motor and to provide overload and low-voltage protection as well as reduced starting torque. The increase in motor speed is controlled by a timed relay, which also comes into service when the machine is started during the high-speed portion of the doff.





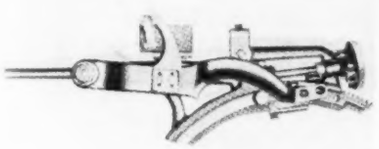


Fig. 1

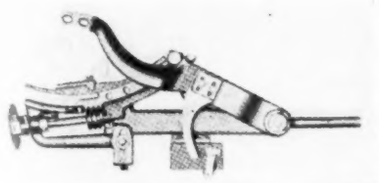


Fig. 2

Twenty-Pound Cones

CONES of twine and cord weighing 20 lb. are produced by a new winder, known as No. 45, developed by the Universal Winding Co., 95 South St., Boston. Carpet warp and twine are wound on this machine in a manner common to other Universal machines; i.e., the coils are made to lie in close contact with each other, air spaces being thereby excluded. This method of winding increases the quantity in each package and is said to save one-third the packing space, storage, freight, etc., formerly required. A single cone of 8/3 carpet yarn, for example, will hold approximately 40,000 yd. The machine is built for easy adaptation in single-spindle form or in gangs as the individual mill may require.

Variable-Speed Beaming

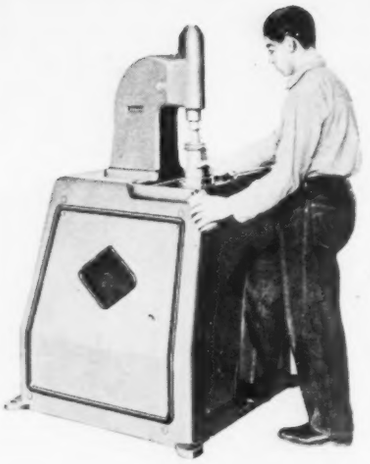
PRODUCTION in long-chain beaming has been increased 37% by the application of variable-speed transmission with automatic control to a beamer at the Lindale (Ga.) plant of Pepperell Mfg. Co., states the Reeves Pulley Co., Columbus, Ind. The transmission gives constant speed of yarn travel and uniform tension of the yarn as the beam builds up in diameter. Because the tension is uniform throughout the operation, the machine can be started at high speed, while the maximum production rate is reached much earlier and is maintained at constant rate thereafter. A uniform density of yarn on the beam is obtained.

As shown in the accompanying photograph, a follower roll rests lightly on the beam. As the beam fills, the roll is swung away from the center. A lever attached to the same shaft as the follower roll is swung concordantly and actuates the control of the transmission to reduce the speed of the machine.

In a test conducted in the mill mentioned, it was shown that when variable-speed transmission was not used the revolutions per minute of the beam were 91, giving a yarn starting speed of 71.5 yd. per minute on a beam barrel 9 in. in diameter and a maximum yarn speed of 203.5 yd. per minute at the full diameter of the beam, 25½ in. When the variable-speed transmission was applied, the beamer was started at 224 r.p.m. with the yarn traveling at the rate of 176 yd. per minute. This speed was maintained until the diameter of the beam reached 11½ in., thus giving the beam time to form properly before the speed of yarn travel was increased to the maximum rate of 224 yd. per minute. From this point on, the yardage was automatically maintained at this figure by gradually and automatically decreasing the revolutions per minute of the beam. The application of the transmission reduced the actual machine time from 72.7 min. to 45.5 min. and raised the average yardage per minute from 137.5 to 219.8.

Silk Moistening Machine

CONDITIONING silk cones for knitting in a few seconds per cone is accomplished by a new machine placed on the market by the Process De-



velopment Co., 1345 Frankford Ave., Philadelphia. The silk wound on perforated cones. The operator takes a dry cone from a supply at one side, places it over a nozzle on the machine, and presses his foot on a treadle which serves to clamp a cover over the top of the cone and to turn water under pressure into the interior of the cone. When water appears on the surface of the cone, the water pressure is released and compressed air is applied. The water spouts up through the inside of the cone and saturates the silk. The compressed air atomizes and distributes the water and removes any excess moisture. Various solutions may be used, instead of water alone for conditioning the silk, including those embodying mildew preventers. Excess solution passing through the cone is recirculated. Advantages claimed for the machine include: improved knitting quality, fewer press-offs, reduced gumming of needles, and quicker moistening.

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Tubes, Cones, Bobbins

A simplified practice program covering hole sizes for paper tubes and bobbins for filling cop winders, and basic dimensions for wooden cones for warp and knitting yarns was approved by a general conference of the various interests in the industry, held under the auspices of the Division of Simplified Practice, Bureau of Standards.

Machine Makers Set Up Coordinating Agency

Members of the machinery and allied industries met in New York, June 23 and 24, and adopted a report recommending a federation of trade associations in their field for the purpose of cooperating with the Recovery Act Administrator. Membership was to be limited to trade associations. John W. O'Leary, president of A. J. O'Leary & Sons, Chicago, and past-president of the Chamber of Commerce of the U. S., and of the National Metal Trades Association, was elected to head this organization which is to be called the Machinery and Allied Products Institute.

Textile Exhibitors Elect

At the annual meeting of the stockholders of the Textile Exhibitors Association, Inc., the following directors were elected: F. H. Bishop, Universal Winding Co.; Charles A. Chase, General Electric Co.; D. F. Edwards, Saco-Lowell Shops; Edgar F. Hathaway, Shawmut Engineering Co.; F. W. Howe, Crompton & Knowles Loom Works; J. M. Lasell, Whitin Machine Works; E. L. Martin, H. & B. American Machine Co.; Albert C. Rau; S. F. Rockwell, Davis & Furber Machine Co.; W. I. Stimpson, Draper Corp.; Lewis E. Tracy, Lewis E. Tracy Co. Mr. Martin was elected to fill vacancy caused by death of George P. Erhard, and Mr. Rau fills place left vacant by death of Chester I. Campbell.

The directors later elected Mr. Hathaway, president, Mr. Stimpson, vice-president, and Mr. Rau, secretary-treasurer. Resolutions of sympathy for the family of Mr. Campbell were adopted.

There was no discussion concerning the next exhibition; apparently it was the feeling that this should be held in abeyance for the present. The last exhibition was held in 1930.

Southeastern Merchandise Mart Announced

Textile executives will be invited to display their products in the merchandise mart recently announced by interested business men of Charlotte, N. C. The erection of a modern concrete and steel building, seven stories in height, 106 x 146 ft., was made possible by agreement of the Reconstruction Finance Corp. to purchase first mortgage bonds of the Southeastern Merchandise Market, Inc., the corporation undertaking the project. The top floor of the building will contain an auditorium for use in staging style shows, conventions and other special events. It was estimated that the total cost of the project, including investment in real estate, will be about $240,000, and it is expected to have the structure completed in time for opening on Jan. 1, 1934. The market is being created to offer to the people of the nation the products manufactured in the southeastern territory and to offer to the people of the southeastern States the products made in other sections of the United States. Officers of the Southeastern Merchandise Market, Inc., are: Ira A. Stone, president; E. P. Minogue, executive vice-president; and Banks Cates, secretary. Mr. Minogue for the last several years has been assistant district manager of the Charlotte office of the Bureau of Foreign and Domestic Commerce.

Textile Calendar

American Association of Textile Chemists & Colorists, Annual Convention, Chicago, Sept. 8 and 9, 1933.

Carolina Yarn Association, Annual Golf Tournament and Outing, Roaring Gap, N. C., Sept. 15 and 16, 1933.

Fourteenth Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9, 1933.

Silk Assn. of America, Annual Dinner, Waldorf-Astoria, New York, Jan. 18, 1934.

Southern Textile Exposition, Eleventh Annual Exhibit, Textile Hall, Greenville, S. C., Oct. 15 to 20, 1934.

Textile Accidents Drop

The severity of accidental injuries in the textile industry decreased 30% during 1932, as compared with 1931, according to a recent announcement by National Safety Council, Inc., Chicago. Improvement in frequency, however, was only 2%. Fatalities dropped 50%; permanent partial disabilities, 8%; and temporary disabilities, 1%. Both frequency and severity were higher in the smaller mills.

Following companies made notable safety records last year: M. J. Whittall, Plymouth Cordage, National Waste, Devon Mills, Bemis Bros. Bag, Fisk Rubber, Acadia Mills, Standard Textile Products, U. S. Finishing, Standard-Coosa-Thatcher, Dixie Mercerizing, Acme Finishing, New England Lace, Waypoyset, New England Spun Silk, James Lees & Sons, Scranton Lace, Johns-Manville, and U. S. Rubber.

Fiber Studies Released

The report of a scientific study on the external and internal characteristics of textile fibers conducted by G. Gordon Osborne at the Massachusetts Institute of Technology, Cambridge, Mass., has been made public by Frank D. Cheney, director of the Textile Foundation, Commerce Building, Washington, D. C. One object of the work is to correlate the microscopically visible or detectible structure of fibers with the chemical and X-ray analyses and with the results of physical tests for strength, elasticity, elongation, etc.

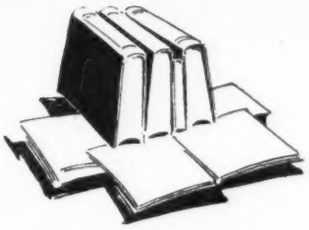
Leipzig Fair Aug. 27-31

The International Fair at Leipzig, Germany, will hold its regular fall session from Aug. 27 to 31. Application for display space at the Fall Fair indicates unusual activity in all its divisions. Every effort will be made to serve foreign visitors and to facilitate overseas trade. The fair maintains a New York office at 10 East 40th St.

Summer Textile Courses

Special summer courses in textile microscopy, technical analysis, and laboratory work, under the direction of Prof. E. R. Schwarz are being offered by Massachusetts Institute of Technology, Cambridge. The work begins on July 26 and ends on Sept. 6.

NEW PUBLICATIONS



MODERN INDUSTRIAL ORGANIZATION; by Herbert von Beckerath; McGraw-Hill Book Co., Inc., New York; 385 pages; $4.00.

With the problem of regulation of industry now in the fore-front of national thinking, this book is of particularly timely interest. It is a translation of the author's "Der Moderne Industrialismus," published at Jena in 1930. It discusses modern industrial organization with special reference to the experience in Germany, where control of industry has been developed in a high degree. Manufacturers will be interested in the closing sentences of the book: "Nobody can predict the course of future events, but one thing is improbable, namely, the gradual evolution of private industrialism to socialism. An exaggerated governmental interference with private industrialism may lead to a breakdown of the present economic system. But it will not lead to socialism. Socialism presupposes a collectivist mentality which differs fundamentally from that possessed by industrial workers, for even those who belong to socialist parties are molded by the influence of an individualistic and materialistic century."

COTTON FABRICS DIRECTORY, BY CONSTRUCTIONS AND SOURCES (2nd edition); Textile Committee, National Association of Purchasing Agents, New York; 96 pages.

This detailed guide to sources of supply on hundreds of constructions of cotton fabrics is divided into three sections. The first and by far largest section covers gray goods; the second, colored goods; the third, miscellaneous, including industrial knit goods, felts, filter fabrics, etc. The committee issued its first edition a year ago and found the demand quickly warranted a new, enlarged and revised edition.

REVOLUTION OR JOBS (The Odenheimer Plan for Guaranteed Employment); by Thomas Ewing Dabney; The Dial Press, Inc., New York; 251 pages; $1.50.

When Sigmund Odenheimer, president of Lane Cotton Mills Co., New Orleans, first advanced his plan for guaranteed employment last November, it met with such skepticism. Briefly, he proposed a Constitutional amendment giving Congress power to legislate on hours of labor; this to be followed by appointment of an "Hours of Labor Commission" which would set maximum length of work-week for industries. Just recently, without the aid of such an amendment, we have set up machinery which proposes to enable industry to do this for itself. We do not know whether or not Mr. Odenheimer feels the new plan meets his original idea, but we do know that his contribution to national thought on the subject merits careful reading. It is sympathetically recorded by the author of this book.

Business Literature

Expansion Joints. Yarnall-Waring Co., Philadelphia. Bulletin describing the "Yarway" cylinder-guided expansion joints, and the method of repacking expansion joints under pressure. Engineering data included.

Pulleys. American Pulley Co., Philadelphia. Booklet giving complete information, including sizes of belts and pulleys, on single groove sheaves.

Concrete Floors. Portland Cement Association, Chicago. Two illustrated folders entitled "Concrete Floors for Industrial Buildings" and "Concrete Floors—How to Build Them."

Compressors. Allis-Chalmers Mfg. Co., Milwaukee. Illustrated leaflet showing single-stage water-cooled rotary air compressors and dry vacuum pumps.

Fire Brick. McLeod & Henry Co., Troy, N. Y. Illustrated booklet on "steel mixture" brick for oil-fired furnace linings, and other types of fire brick and refractories.

Steel Products. Greenville Steel & Foundry Co., Greenville, S. C. Illustrated circular showing steel cloth skids, trucks, bobbin boards, steaming trays and other equipment for textile mills, metallized or cadmium plated to eliminate rust and stains.

Welding Costs. The Linde Air Products Co., New York. "How to Figure Oxwelding and Cutting Costs"—an illustrated bulletin.

BUSINESS NEWS

The Century of Progress Fair, now current in Chicago, has brought together among its many exhibitors a large group of firms which in one way or another serve the textile industry. Among the general exhibits the following are of particular interest to the textile man as they include not only a few textile firms but others which supply machinery, devices and products to the textile industry:

Alemite Corp.
American Telephone & Telegraph Co.
Bakelite Corp.
Bausch & Lomb Optical Co.
Sidney Blumenthal & Co.
Century Electric Co.
Clipper Belt Lacer Co.
Cluett, Peabody & Co.
Container Corp. of America
Copper & Brass Research Association
Crane Co.
Curtis Lighting, Inc.
Diamond Braiding Mills
Erwin Wasey & Co., Ltd.
Firestone Tire & Rubber Co.
Foxboro Co.
General Electric Co.
General Electric X-ray Corp.
Gulf Refining Co.
Hanovia Chemical & Mfg. Co.
Ilg Electric Ventilating Co.
Illinois Steel Co.
International Harvester Co.
International Nickel Co.
Iron Fireman Mfg. Co.
Johns-Manville Corp.
Kendall Co.
Link-Belt Co.
Marshall Field Mills Corp.
McGraw-Hill Publishing Co.
National Oil Products Co.
New Departure Mfg. Co.
Phoenix Hosiery Co.
Pure Oil Co.
Reliance Mfg. Co.
Reynolds Exhibits Corp., including Bi-Lateral Fire Hose Co., Celanese Corp. of America, Contour Hosiery Mill, Duplan Silk Corp., Earnshaw Knitting Co., General Hosiery Co., Johnson & Johnson, National Carton Co., Permutit Co., Rawplug Co., D. T. Williams Valve Co. and Wullschleger & Co.
Sinclair Refining Co.
Singer Mfg. Co.
Sloane, W. & J., Inc.
Standard Brands, Inc.
Taylor Instrument Co.
Texas Co., The
Timken Roller Bearing Co.
Union Carbide & Carbon Corp.
United States Plywood Co.
Victor Chemical Works
Wayne Pump Co.
Westinghouse Electric & Mfg. Co.

Odell Mill Supply Co., Greensboro, N. C., announce that Jack M. Alexander, formerly with the Gastonia (N. C.) Mill Supply Co., is now representing them with headquarters in Gastonia.

Gates Rubber Co., Denver, Colo., has appointed J. G. Iler, Charlotte, N. C., sales engineer, as representative in North and South Carolina. V. B. Brookshire, Charlotte, is district representative for North Carolina, while George R. Morgan, Greenville, S. C., is district representative for that State.

D. W. Haering & Co., water consultants, Chicago, have added John J. Felsecker to their consulting staff.

Jasper-Groz Needle Co., Inc., New York, is the name under which the knitting machine needle business of **E. W. S. Jasper** is continuing since July 1. Management and character of business remains unchanged.

Comer-Kimmel Machinery Co., Atlanta, Ga., has been formed by Ben T. Comer and Leon Kimmel, experienced for many years in handling textile machinery. The scope of services offered by the new firm, with offices at 308 Ivy St., will include the appraisal and complete liquidation of mill properties.

Permutit Co. removed its general offices from 440 Fourth Ave., New York, to the McGraw-Hill Building, 330 West 42d St. on July 1.

National India Rubber Co., Providence division of the U. S. Rubber Co., will increase its Lastex department production facilities 60%, according to Charles W. Rehor, general manager. Additional machinery will be installed and the working force increased by 300.

George F. Siddall & Co., Providence, R. I., makers of soap and other products for the textile industry, recently purchased a building at Camp Wadsworth, Spartanburg, S. C., and plans establishment of a branch plant there.

Titan Chemical Products, Inc., Jersey City, N. J., has established a southern sales office in Charlotte, N. C. Robert T. Grant has been made southern sales manager. Later the company will provide a warehouse and distributing facilities there. This corporation manufactures sizings, oils, chemicals of various kinds, colors and finishing materials, used in textile plants.

THE PERSONAL PAGE

Leonard S. Little has been elected president of the U. S. Finishing Co., succeeding **Henry B. Thompson, Jr.,** who becomes chairman of the board. Mr. Little was formerly vice-president and general manager of the Slatersville Finishing Co. General offices of the company will be moved from New York to Providence about July 25.

Donald S. Ashbrook has been appointed general manager of the Slatersville (R. I.) Finishing Co., succeeding Leonard Little. Mr. Ashbrook was formerly president of the Bradford Dyeing Association and prior to that served for many years in an executive capacity with Joseph Bancroft & Sons Co.

Malcolm Muir, president of McGraw-Hill publishing Co., has been named by General Hugh S. Johnson to be deputy administrator in the National Industry Recovery Administration. Mr. Muir, who is a past-president of Associated Business Papers, Inc., was a member of the National Committee for Industrial Rehabilitation and chairman of its New York board, thus having been active in industrial recovery a year before the new law was enacted.

Elroy Curtis has been elected vice-president of Southeastern Cottons, Inc. He has been in the textile industry since 1900 and, since 1923, has been vice-president of Fleitmann Textile Corp. He is also president of Cartersville (Ga.) Mills, Inc., president of Ware (Mass.) Valley Mfg. Co., and vice-president of Santee Mills, Orangeburg, S. C.

George S. Harris, formerly president of Exposition Cotton Mills, Atlanta, Ga., but for the last several months in charge of cotton goods purchases for the American Red Cross, with headquarters in Washington, D. C., has become associated with **Capt. Elliott White Springs** in the management of Lancaster (S. C.) Cotton Mills, as vice-president in charge of manufacturing.

Charles H. Ross, vice-president and general superintendent of the Ranlo (N. C.) Mfg. Co. for the last 12 years, has resigned to become general superintendent of the fancy weaving division of Burlington (N. C.) Mills Co., effective July 15.

B. W. Gillespie, formerly with Dilling Mills Co., King's Mountain, N. C., has been elected vice-president and general manager of the Charles Mill Co., Red Springs, N. C.

J. Killars, Jr., for several years with Deering, Milliken & Co., New York, has been appointed general manager of Drayton Mills, Spartanburg, S. C.

Walker F. Prescott, manager of Prescott & Co., Reg'd., Montreal, Canada, has been elected president of the Lowell Textile Institute Alumni Association. **Chester C. Pease,** agent of Columbian Mills, Otis Co., Greenville, N. H., is the new vice-president; and **Prof. Arthur A. Stewart,** secretary-treasurer.

William S. Pepperell was re-elected president of the Southern New England Textile Club at the annual meeting at Riverside, R. I., June 17. Other officers elected were: first vice-president, **Frederic W. Howe;** second vice-president, **William O. Buzzell;** joint secretary-treasurer, **R. C. Munroe** and **F. L. Chase, Jr.;** auditor, **Herbert G. Beede.**

Hill Hunter, for many years purchasing agent for Proximity Mfg. Co., Greensboro, N. C., and other mills in the Cone group, has been appointed secretary and general manager of the Proximity Mfg. Co. and the Revolution Cotton Mills, to succeed the late **J. E. Hardin.**

Winder Gary recently resigned as superintendent of the Ware Shoals (S. C.) Mfg. Co. to become general superintendent of Hannah Pickett Mills, Rockingham, N. C.

J. Y. Jones has been promoted from overseer of spinning to superintendent of the Newberry (S. C.) Cotton Mills, succeeding the late **J. Marion Davis.**

Walter T. Swink, former secretary and treasurer of W. S. Gray Cotton Mills, Woodruff, S. C., is now connected with the Watts Cotton Mill, Laurens, S. C.

W. L. Phillips has become manager of the J. W. Sanders Cotton Mills, Meridian, Miss.

Barry Durfee, assistant treasurer of the American Printing Co., has been made general manager of the company's plants at Kingsport, Tenn., and Fall River, Mass. Nathan Durfee, his father, continues as executive vice-president and supervisor of the cotton manufacturing plants of the company and printing unit. **Arthur Barnes** has been named development engineer of both cotton and printing divisions.

J. J. Dell is production manager of the new company which recently purchased the Superior Hosiery Mills, Lexington, N. C., headed by **John W. Lambeth** of Thomasville, N. C. Mr. Dell was secretary and treasurer of the old company.

J. B. Rhinehardt, son of J. L. Rhinehardt, superintendent of Phenix Mills, Kings Mountain, N. C., is now associated with the finishing department of the Hartsville (S. C.) Print & Dye Works.

Stewart Lindley formerly of Spool Cotton Co., is now Western representative for Standard Coosa, Thatcher Co., working out of the Chicago office, handling their complete line of threads for industrial uses.

J. W. Webb has been appointed superintendent of Charles Mill Co., Red Springs, N. C., succeeding **W. D. Stockton** who is now connected with the Eton Mills Co., Shelby, N. C.

W. F. Patrick recently resigned as superintendent of throwing at the Pinehurst Silk Mills, Hemp, N. C., to accept a similar position with the J. C. Welwood Silk Throwing Co., McMinnville, Tenn. Mr. Patrick's new duties cover the throwing of silk hosiery yarns.

John Soler, Jr., formerly superintendent of the Maxwell Silk Mills, Inc., Allentown, Pa., has moved to the New York office of the company (Maxwell Textile Corp.) where he will have charge of styling and production.

Allen Jones, for three years superintendent of Clyde Fabrics, Inc., Newton, N. C., has resigned and accepted a similar position with the Muscogee Mfg. Co., Columbus, Ga.

Theodore Pibil is now superintendent of the California Cotton Mills Co., Canebrake plant, Uniontown, Ala.

Wright Cannon has been appointed assistant superintendent of the Newberry (S. C.) Cotton Mills.

R. V. Revels has been promoted to assistant superintendent of the Aragon-Baldwin Cotton Mills, Inc., Aragon plant, Rock Hill, S. C. He was formerly head of the weaving division. **A. N. Hawkins** has been promoted to the superintendency of the weaving division.

W. N. Williams, for the last 43 years closely associated with the late **D. E. Rhyne,** Lincolnton, N. C., as mill superintendent, resigned his position, effective June 24. After a vacation he will resume his connection with the industry.

William Murphy has returned to his old position as manager of the Philmont plant of the Guerin Mills, Woonsocket, R. I., following reopening of the plant after a year's shutdown.

W. A. Hunt is now general superintendent of the carding division of the Sibley Mfg. Co., Augusta, Ga. He formerly held a similar position with the Bibb Mfg. Co., Macon, Ga.

Joseph Cobb, is now superintendent of Langley (S. C.) Mills. He was formerly connected with the Lancaster (S. C.) Cotton Mills.

Obituaries

Col. Webster Knight, at one time head of B. B. & R. Knight, Rhode Island cotton manufacturers, and son of Robert Knight of the original partnership, died June 30 at his summer home at Alton Bay, N. H. He was in his 79th year.

J. Ernest Hardin, aged 57, secretary and general manager of Proximity Mfg. Co. and Revolution Cotton Mills, Greensboro, N. C., and president of Asheville Cotton Mills, died June 26 as result of an automobile accident.

Harry Dribben, for 29 years with the Cone Export & Commission Co., New York, was killed in an automobile accident near Morehead City, N. C., June 16.

George M. Traber, aged 72, president of the Perry (N. Y.) Knitting Co., died in his office on June 7.

Walter L. Huse, aged 70, former treasurer of the Laconia (N. H.) Needle Co. and partner in W. D. Huse & Sons, died June 15. Mr. Huse retired from active business about two years ago.

R. P. Shapard, president and treasurer, Spalding Knitting Mills, Griffin, Ga., died of a bullet wound on June 9.

Charles H. Cowan, Sr., aged 82, vice-president of the Atwood Machine Co., died June 9 at Stonington, Conn.

Thomas A. Sizemore, aged 72, for 34 years superintendent of the American Spinning Co., Greenville, S. C., who retired in March due to ill health, died June 18.

Recovery Act Personnel...

THE ORGANIZATION AND THE MEN WHO WILL ADMINISTER IT

THE implications of the National Industrial Recovery Act are so complex as to defy the grasp of the most astute student of economics. The organization which will administer the act is so simple as to fall within the understanding of a primary-school pupil. Many a one-horse business has a more complicated organization-chart.

It is a working-crew—and how they do work!

On the two pages following, are shown pictorially the key men and women who make up that crew. This presentation is necessarily incomplete, because new names are being added from time to time.

At the top, and responsible only to the President of the United States, is General Hugh S. Johnson, administrator of the National Industrial Recovery Act (nicknamed Nira). Soldier, industrialist, General Johnson epitomizes the man of action. At first contact, he seems hard-boiled . . . and then one strikes a glint of humor beneath. We would not care to try to put anything over on him; but we would feel assured of a square deal if we went to him with a good case. Above all, he is decisive. He it is who must say "yes" or "no" after all the thousands of words have been said by others—and we doubt that he will hesitate long in producing either an affirmative or a negative.

Associated with him is the National Industrial Recovery Board, composed of the Secretary of Commerce (chairman), the Attorney-General, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Labor, the chairman of the Federal Trade Commission, the Director of the Budget, and the Assistant Secretary of Commerce acting as executive secretary of the board.

As direct assistants, the General has an all-star cast: *Assistant for industry*, Dudley Cates, vice-president of an insurance firm in Chicago. *Assistant for labor*, Edward F. McGrady, for many years legislative representative of the A. F. of L. *Chief of legal division*, Donald R. Richberg, attorney for railroad brotherhoods. *Chief of research and planning division*, Dr. Alexander Sachs, economist and director of the Lehman Corp. of New York.

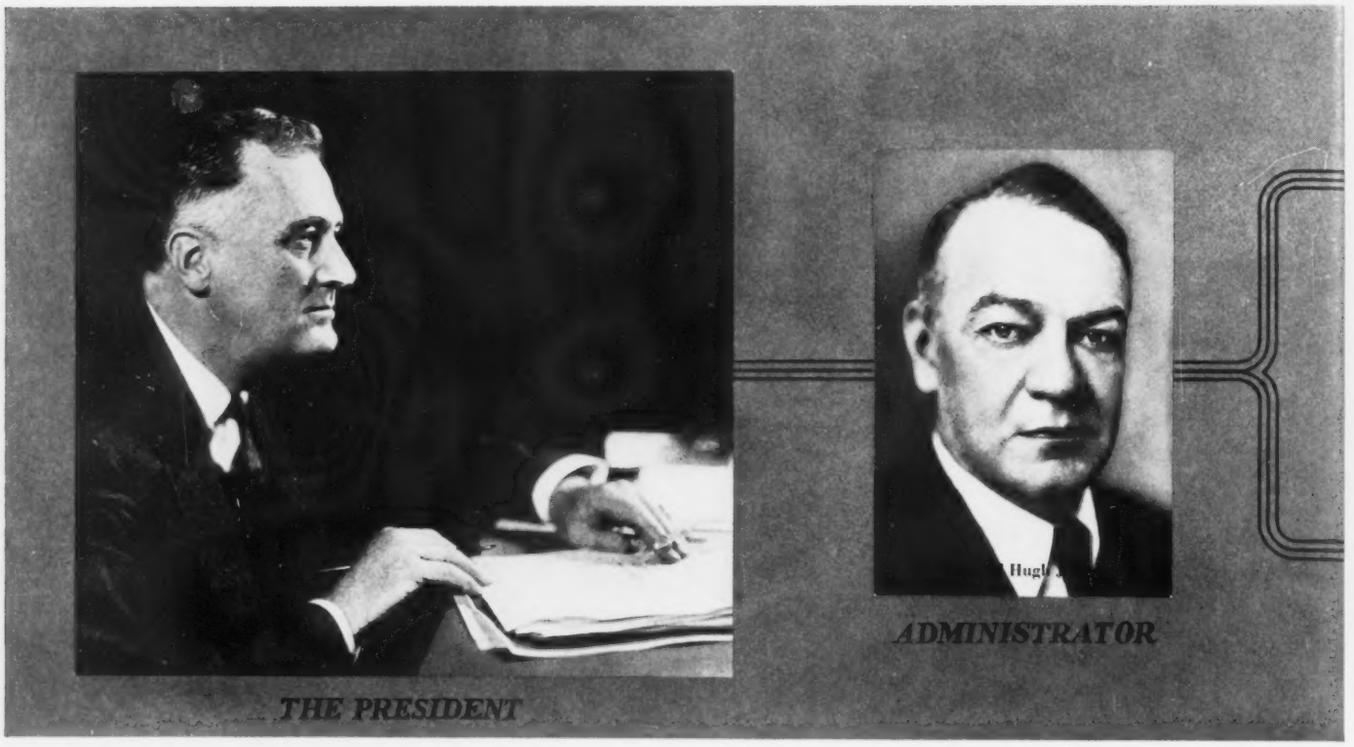
Serving in an advisory capacity are three boards, representing industry, labor and consumers. The industry board, named by the Secretary of Commerce, includes Walter C. Teagle, chairman, Alfred P. Sloan, Jr., Edward N. Hurley, Gerard Swope, Louis Kirstein, Austin Finch, David Coker (cotton-breeding expert) and the cotton industry's own Bill Vereen of Moultrie, Ga. The labor board, appointed by the Secretary of Labor, is headed by Dr. Leo Wolman and includes William Green, Sidney Hillman, John Frey, Joseph Franklin, Father Francis Haas and Miss Rose Scheiderman. The consumers' board has Mrs. C. C. Rumsey as chairman, and Professor Frank Graham, Professor William Ogburn, Mrs. Joseph J. Daniels, Miss Belle Sherwin, Prof. Alonzo E. Taylor, and Lucius R. Eastman as the members.

But it is the next group down the line which is the real works of the organization, under the General. The deputy administrators are the men who really execute, the men who come into contact with trade-association officials and industrialists who go to Washington with codes in various stages of preparation. The deputy who worked with the cotton industry committee is W. L. Allen, consulting metallurgist and former steel manufacturer. Those who watched him in action at the cotton hearings saw a keen, calm individual—always courteous but always ready to cry "enough"—and to mean it. In the handling of a particular code, the deputy must not be one who has a direct interest in the industry involved. He has at his command, however, the services of an advisor on the manufacturer's problems in that industry and of an advisor on its labor problems.

The textile industry has two of its members in the group of deputies: Nelson Slater, president of S. Slater & Sons, and Arthur D. Whiteside, former president of the Wool Institute but now president of Dun & Bradstreet, Inc. Other deputies include Prof. Earl D. Howard of Northwestern University; C. C. Williams, former Chief of Ordnance; K. M. Simpson, consulting engineer and metallurgist; Malcolm Muir, president of McGraw-Hill Publishing Co.

How the System Works

Such is the plan of organization from the top down. Representatives of industry, however, approach it from the other end. They see one of the deputy administrators, submit their code to him—and then engage in in-



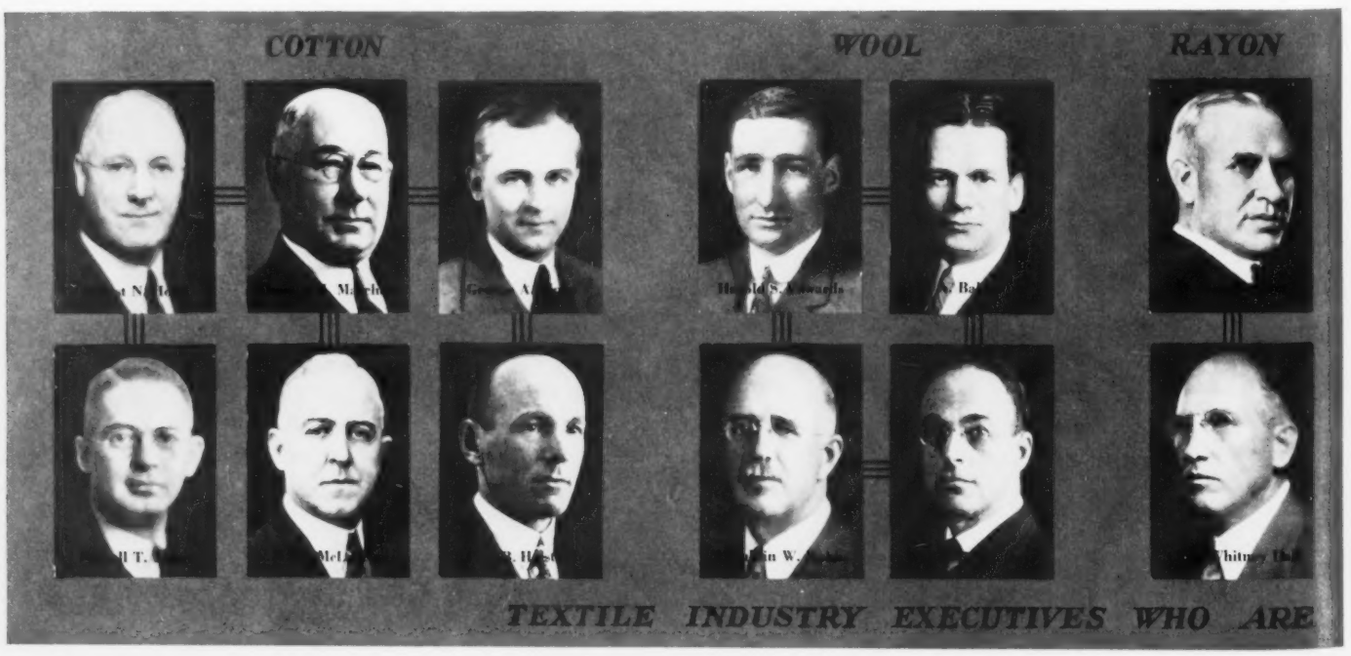
formal conferences in which the deputy and his advisors participate.

The next stage is a public hearing at which all individuals or organizations whose interests are affected by the proposed code, are invited to appear. Since these hearings are neither judicial nor legislative investigations, but rather administrative inquiries, there are no statutory limitations or controls upon procedure. Such control rests entirely with the deputy administrator in charge, acting in conformity with any general regulations or with specific instructions of the Administrator. Consequently, those who appear to give testimony will find that there is nothing to be gained by retaining expert counsel, if the purpose is to indulge in legal tactics common in a court of law. Only the deputy, or such person or persons as he may direct, will question the witnesses;

ADVISORY

THE personnel of the three advisory boards named by the National Recovery Administration is as follows:

Industrial Advisory Board: Walter C. Teagle, Standard Oil Co. of New Jersey, *chairman;* Austin Finch, president Thomasville (N. C.) Chair Co.; Edward N. Hurley, chairman of board of Hurley Machine Co., Chicago; David R. Coker, president, Coker's Pedigreed Seed Co., Hartsville, S. C.; John B. Elliott, Jameson Petroleum Co., Los Angeles; H. H. Heimann, executive manager, National Association of Credit Men; Louis Kirstein, vice-president William Filene's Sons Co., Boston; Alfred P. Sloan, Jr., president General Motors Corp., New York; Gerard Swope, president General Electric



BOARDS

Co., New York; William J. Vereen, cotton manufacturer, Moultrie, Ga.

Labor Advisory Board: Dr. Leo Wolman, economist, *chairman;* John Frey, Metal Trades Dept., A. F. of L.; Joseph Franklin, president International Boilermakers' Union; William H. Green, president A. F. of L.; Father Francis Haas, Catholic Welfare Council; Sidney Hillman, president Amalgamated Clothing Workers; Miss Rose Schneiderman, secretary Woman's Trades Union League.

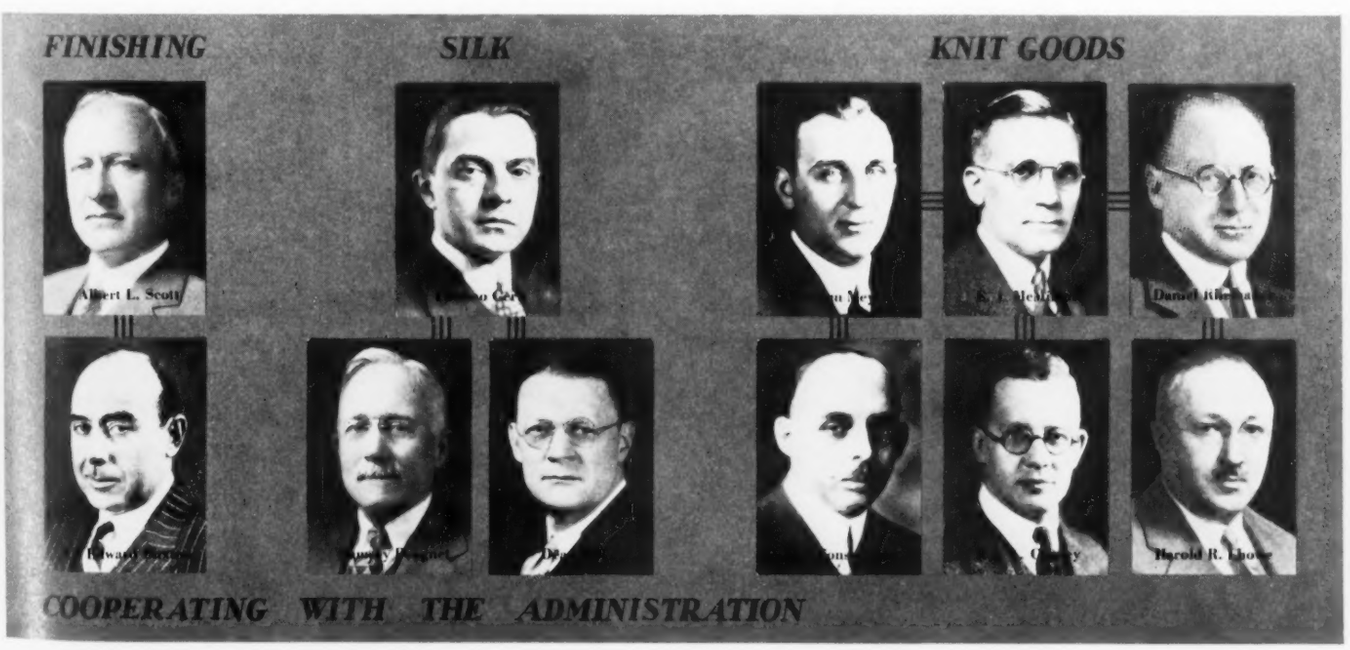
Consumers' Advisory Board: Mrs. C .C. Rumsey, social worker, New York, *chairman;* Mrs. Joseph J. Daniels, president Indiana League of Women Voters; Lucius R. Eastman, president American Arbitration Association, New York; Prof. Frank Graham, president University of North Carolina, Chapel Hill, N. C.; Prof. William Ogburn, University of Chicago; Miss Belle Sherwin, president National League of Women Voters; Prof. Alonzo E. Taylor, Stanford University.

under no circumstances will any representative of opposing interests be permitted to cross-examine a witness.

The result may not be as spectacular as a first-class murder trial, but the method certainly serves to draw out the facts in an orderly manner. And facts, it will be found, are what the administrator and his deputies are after. Argument, controversy, oratory, opinion, are outlawed. "You can forget the bouquets," said General Johnson at one point in the cotton hearing.

When a code has been agreed upon, it will be submitted by the administrator to the President for approval. When approved by the President, the code will be in the nature of the "law merchant" for the industry.

Such, then, are the organization and the procedure. The set-up will not please the rugged individualists, but just now rugged individualism is not having its place in



the sun. The act is based on the belief that individualism has been so rugged as to make business anything but rugged.

One final thought: Industry does not have to approach the Commerce Building at Washington with fear and trepidation. "Nira" is being administered by a group of human beings. Johnson, Allen, Slater, Richberg, Sachs and the rest are just men. They are feeling their way every bit as much as industry itself just now. They don't bite—or at least they don't want to; they may growl a bit if Washington gets too hot or witnesses too flowery, but most of the times they are just regular guys. And no one who is a regular guy himself need be afraid of them.

Cotton and the Farm Relief Program

By Paul Wooton
Washington Correspondent, TEXTILE WORLD

RISING prices have had the effect of slowing up the work of securing signatures of those willing to plow under a part of their cotton acreage. As this is written, however, all indications point to final success. It also has been found that the number of farmers a field worker could interview per day is much smaller than estimated. Before actual signatures were sought it was felt that the farmer would not over-estimate through fear that his offer might be rejected. Early in the drive, however, the adjustment administration was faced with such a high percentage of over-estimates that strenuous efforts had to be made to get them revised downward.

Briefly stated, one of the plans offered the cotton farmer provided for a cash payment, based on the productivity of the land, as compensation for retiring a portion of his acreage. The cash payment ranges from $6 per acre for land yielding an average of 100 lb. of lint cotton per acre, to $12 per acre for land yielding an average of 275 lb., or more, per acre, but in addition this farmer was allowed an option at 6c. per pound on Government-held cotton in an amount equal to that which the producer agrees to retire from production.

While it is apparent that the foregoing plan is the better of the two, the appeal of the following offer is explained by the acute need for ready cash. The second plan is an out-and-out lease without the cotton option. The payment under that plan ranges from $7 for land yielding from 100-124 lb. per acre to $20 for land yielding 275 lb. or more per acre.

Under the first plan the grower will receive the smaller payment per acreage in cash within a few days after the acceptance of the plan, but he will have to wait until the first of the year at least for any profit that may be due him on his option. The option covers the amount of cotton that would have been produced on the acreage which is retired. If the price should fall below 6c. per lb., the Government will stand the loss, but the farmer will receive anything above 6c. that the cotton in the pool may bring. In fact, the farmer may wait as long as May 1, 1934, to sell his option.

Preparations for the drive to get the farmers to sign up were better organized than was any Liberty loan campaign. More than 20,000 volunteer workers, in addition to county agents and the extension forces of the Department of Agriculture, covered the Cotton Belt intensively preaching the benefits of the scheme.

The personnel of the Agricultural Adjustment Act is headed by George N. Peak, administrator of the act and Chas. J. Brand, co-administrator. Cully A. Cobb is cotton production administrator. Five regional consultants have been selected from southern States by the administrators to assist in the farm program. These five are V. B. Blalock, Raleigh, N. C.; E. B. Jackson, Wagner, S. C.; Ajma Allison, Corsicana, Texas; C. G. Smith, Blytheville, Ark.; George Bishop, Cordell, Okla.

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Cooperating with the Recovery Act Administration

ADVERTISING PAGES REMOVED

Textile World Analyst

TEXTILE ACTIVITY AT PRE-DEPRESSION LEVELS

THE onward march in textiles continues unabated.

Based on total consumption of raw materials, rate of mill operation in the industry as a whole during the first five months of this year was about 20% higher than that for the first five months of 1932. When we stated last month that it was probable "some sort of a record was set in May," we were not guilty of over-statement. When statistics became available, they showed that May's textile mill activity was 91% above that of May last year.

In fact, textile activity is now about on a level with that prevailing four years ago, before the depression descended upon us. Undoubtedly the June statistics, when available, will show a continued high rate of operation.

Prices also continue to soar. The booming raw-cotton market in June was immediately reflected in the goods trade. Tables I and II show the trend of manufacturing margins in carded cotton fabrics, and carded yarns. The former is graphically portrayed in Chart I. In both cases, of course, the margins are at new highs for the year, and in fact for the period since the compilation of these particular figures was started.

All branches of the industry have experienced a similar tendency, varying only in degree.

TEXTILE WORLD'S price index numbers, shown on this page, reveal two interesting facts. The first is that the spread between raw material and manufactured products has widened considerably. For example, when the raw cotton index stood at 75 in June, 1931, the yarn and cloth indices were both 97. Last month, with raw cotton at 75.5, the latter two indices were 109 and 117, respectively. Similarly, when the raw wool index was 121 in November, 1930, the figures for tops and yarns were 133 and 154, respectively. This compares with this June's indices of 122 for wool, 139 for tops and 185 for yarns.

The second item of interest is the extent to which recent gains have conteracted losses of the last few years. All the index numbers, with the exception of raw cotton and raw silk, are now above 1914, the base line of this series.

It seems almost brutal to even question the validity of the textile price and production up-swings, now that the industry is getting its first taste of red meat after years of near-famine. Nor is the situation serious enough to warrant a harsh warning. Nevertheless, the textile markets in recent weeks have demonstrated—in their more extreme moments—a susceptibility to hysteria which might become dangerous.

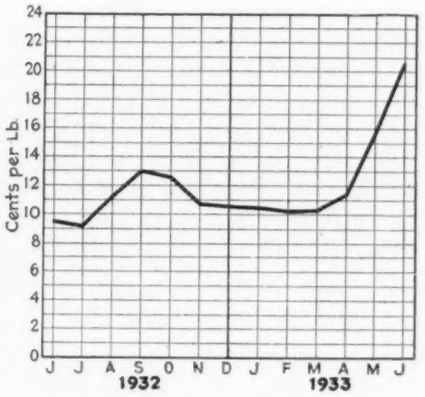

CHART I—Example of recent spectacular rise in textile manufacturing margins. This chart is based on TEXTILE WORLD'S *compilation for a selected group of carded cotton fabrics and shows the trend from June* 1932 *to June* 1933 *inclusive...*

Granted that the industry recovery act and the agricultural act furnish ample basis for anticipating more or less permanent higher prices, nevertheless some check should be kept on the speed with which adjustment to those expectations is made. Nor is it wise to increase production schedules without any regard to immediately current demand.

Undoubtedly, the situation will quiet down shortly. Conditions which, during the last month or two, have seemed startling in their novelty, will gradually become merely a part of the normal background. The sooner that balance is achieved the better. Meanwhile, a little less avidity might be advisable.

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	15.3	January, 1933..	10.4
October, 1931..	13.3	February, 1933.	10.1
January, 1932..	12.1	March, 1933...	10.2
June, 1932.....	9.5	April, 1933.....	11.4
July, 1932.....	9.1	May, 1933.....	15.6
August, 1932..	11.1	June, 1933.....	20.6
September, 1932	13.0	June 7.....	19.3
October, 1932..	12.6	June 14.....	20.2
November, 1932	10.7	June 21.....	20.2
December, 1932	10.6	June 28.....	21.2
		July 1.....	22.3

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	12.6	January, 1933..	10.2
October, 1931..	12.7	February, 1933.	9.4
January, 1932..	10.9	March, 1933....	9.8
June, 1932.....	9.9	April, 1933.....	10.1
July, 1932.....	9.6	May, 1933.....	12.3
August, 1932...	9.7	June, 1933.....	15.4
September, 1932	12.8	June 7.....	14.3
October, 1932..	12.3	June 14.....	15.2
November, 1932	11.3	June 21.....	15.6
December, 1932	10.9	June 28.....	16.1
		July 1.....	16.0

▼ ▼ ▼

Textile World's Price Index Numbers

Date	Cotton Index Numbers: Cotton	Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Silk Index: Raw Silk
July 31, 1914..	100	100	100	100	100	100	100	100	100
1925.....	187	188	189	176	223	229	224	233	143
1926.....	140	155	157	149	184	189	179	207	136
1927.....	140	153	159	153	181	184	187	195	119
1928.....	160	162	162	166	199	202	199	197	110
1929.....	153	144	145	167	176	179	192	211	108
1930.....	108	125	123	144	127	139	161	202	179
1931.....	68	93	92	119	99	112	134	161	54
1932									
Jan.....	53	78	74	102	94	104	127	147	41
July.....	47	68	62	96	59	72	101	116	25
Oct.....	52	83	78	107	82	97	115	130	37
Dec.....	48	74	69	103	77	87	108	125	33
Jan. 1933.....	50	72	67	100	76	85	105	125	29
Feb. 1933.....	48	68	65	95	75	83	102	125	26
Mar. 1933.....	49	70	66	96	75	84	102	125	26
Apr. 1933.....	56	74	72	97	78	90	104	125	29
May 1933.....	69	93	94	101	104	113	116	169	34
June 1933.....	76	109	117	112	122	139	185	192	47

TEXTILE WORLD'S

Cotton Digest

IT is almost impossible to exaggerate the credit due the members of the cotton industry committee for their work in producing the code submitted at Washington. For weeks, they have labored day and night. They have neglected their own businesses. They have subordinated self-interest to the good of the whole. The result may not—in fact, could not—please everyone, but the effort which was put into it cannot fail to have the admiration of all.

Similarly, the attitude of General Johnson, Deputy Allen, and others of the administrative staff, deserves the highest praise. We have sat through innumerable hearings and meetings in our time, but we have never attended one characterized by a more perfect combination of businesslike dispatch, courtesy, and impartiality, than featured the conduct of the cotton code hearing.—*Editor.*

R.F.C. Finances Cotton Shipments to Russia

Efforts to dispose of excess stocks of American cotton, with the assistance of loans by the Reconstruction Finance Corp., made further progress this month, when it was announced that loans totaling about $4,000,000 had been authorized for the purpose of financing the shipment of 60,000 and 80,000 bales to Russia. One condition of these loans was that the cotton must be purchased in the open market from surplus cotton and not from any holdings of Government agencies. The loans, it was stated by R.F.C. officials, will be for one year at 5% interest and will be secured by notes of the Amtorg Trading Corp., which is an American corporation owned by the Russian government, unconditionally guaranteed by the State Bank of the U.S.S.R. Anderson, Clayton & Co., Houston, Texas, and George H. McFadden & Co., Philadelphia, Pa., were said to be the leading shippers involved in the deal.

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Production Increased, Prices Move Higher

Sustained advances in raw cotton, representing a net increase of about 80 points for the month, together with the prospects that the operation of cotton textile machinery would be limited by the industry's code, contributed largely to further price rises in cotton goods. The volume of sales for June was not so heavy as during the previous month, but there was an active demand for goods of almost every description for spot delivery. Quotations on 38½-in., 64x60, 5.35-yd. print cloths moved from 5½c. to 6¼c. in June, while 39-in., 80x80 print cloths advanced from 7½c. to 8¼c. Production schedules were increased, some mills operating until midnight on Saturdays, while several plants have started up after long idleness.

Although the style factor has prevented forward buying of fine goods on the same large scale as staples, New England mills have been constantly stepping up production programs since the latter part of April. Consumption of cotton in that section during May was about 32% above March or April, and it is expected that June figures will show an even greater consumption.

Mills producing style goods have been pursuing a conservative policy and few are sold far ahead at this time.

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S. C. Association Considers New Code

The new code for the cotton textile industry was discussed at the annual meeting of the Cotton Manufacturers Association of South Carolina, held at the Poinsett Hotel, Greenville, S. C., July 7. S. Marshall Beattie was re-elected president of the association, while A. Foster McKissick, of Greenville, was elected vice-president. Willian P. Jacobs, of Clinton, S. C., was re-elected secretary-treasurer. Approximately 150 members were in attendance at the meeting.

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Thread Institute Organized

Cotton thread manufacturers, meeting in New York, June 29, formed the Thread Institute, and announced plans to draw up a code of fair competition for operation under the National Industrial Recovery Act. John B. Clark, of the Clark Thread Co., Newark, N. J., was elected president of the new organization. Other officers elected in the meeting, which was attended by more than 100 manufacturers, was Josef Pollack and Peter J. Hinds, New York, vice-presidents; C. E. Chaffin, Bay State Thread Works, Springfield, Mass., treasurer; and W. R. L. McBee, Gardiner Hall, Jr., Co., South Wilmington, Conn., secretary. The executive committee named David Snyder, who has been identified with the thread industry for 15 years, as secretary in charge of the headquarters office, located at 11 West 42d St., New York.

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Myers and Rankin Named Receivers for Textiles-Inc.

Textiles-Incorporated, formed more than two years ago by a merger of 15 combed-yarn mills of the Gaston County (N. C.) area, was placed in the hands of two operating receivers, A. G. Myers and R. Grady Rankin, Gastonia, N. C., June 16, by an order signed by Judge E. Yate Webb, of the Federal District Court. Attorneys for the receivers are George B. Mason, Gastonia; W. N. Hendren, Winston-Salem, N. C.; and R. E. Cabell, Richmond, Va. The receivership was declared to have been necessary in order to finance increased operations in the various plants of Textiles-Incorporated.

Statement issued by attorneys for the receivers follows: "It was found after prolonged conferences between bank creditors, attorneys, and directors that the only way by which funds necessary to continue the operation of Textiles-Incorporated could be secured was through a receivership, and subject to the orders and approval of the court, a plan has been worked out whereby certain bank creditors have agreed to supply, with the approval of the court, a sum of money which, in the opinion of the executives of the company and of the receivers, will insure the continued operation of the business without interruption."

The receivership does not affect the position of Hampton Textiles, Inc., Gastonia, an affiliate, nor will it apply to the Flint Mfg. Co. and Textiles-Incorporated of South Carolina, which the larger company controls through stock ownership. A. G. Myers served as president of Textiles-Incorporated, while R. Grady Rankin, co-receiver, was secretary and treasurer. J. H. Separk, C. C. Armstrong, and J. Lander Gray, vice-presidents of the company, have voluntarily resigned.

H. A. Florsheim has tendered his resignation as sales manager and vice-president of Textiles, Inc. He has not stated definitely what his future connections will be.

A. W. Latta, in charge of Philadelphia and Chicago offices, will also handle the New York and Boston offices and will divide his time between Philadelphia and New York.

May Cotton Consumption Increased Rapidly

Cotton consumption and spindle activity in the United States for May showed an impressive increase over figures for previous months. Cotton spindles operated during the month, according to the Bureau of Census, at 11.2% of single shift capacity, as compared with 95.7% for April, 93.9% for March, and 63.3% for May, 1932. The total number of spindle hours reported, 8,309,664,722, was the highest since October, 1929, but more than 6,000,000 of cotton spindles in place as of May 31 were still inactive. Cotton consumed in May amounted to 620,909 bales, or 86.8% greater than for the corresponding month last year.

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Cotton Velveteens Tariff Reduced

The Tariff Commission announces that the President has issued a proclamation decreasing the present duty of 62½% ad valorem on cotton velveteens to 44% ad valorem on twill-back cotton velveteens and to 31¼% ad valorem on plain-back cotton velveteens. The changes in duty become effective on July 24, 1933.

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Cotton Mill News

Geneva (Ala.) Cotton Mills have purchased a 90-spindle circulating winder from the Abbott Machine Co., Wilton, N. H., for replacing old style spoolers.

Powdrell & Alexander, Inc., Danielson, Conn., has purchased the plant and business of the **Dartmouth Mfg. Co.,** New Bedford, Mass., for a price said to total $500,000. It is probable that the Dartmouth plant will be operated separately as the Powdrell-Dartmouth Mfg. Co., and that about half of the production will be used by the parent company as curtain material and the balance sold in the usual markets. Addition of Dartmouth's 172,000 spindles and 5,700 looms brings the total controlled by Powdrell & Alexander to 222,000 spindles and 7,064 looms.

Fiske Rubber Co., Jewett City, Conn., sold the real estate and equipment of its tire fabric plant on June 21 and 22. The machinery went in separate lots and brought much higher prices than were thought possible two months ago.

Clark Thread Co., Austell, Ga., is building 40 additional cottages for employees. J. E. Sirrine & Co., Greenville, S. C., architects and engineers, prepared the plans.

Flint River Cotton Mills, Albany, Ga., is erecting 25 houses to take care of an increase in the workers employed.

Eatonton (Ga.) Cotton Mills are about to be started up under the ownership of J. C. and D. C. Collier, Barnesville, Ga., for many years operators of the Collier Mills.

Jefferson (Ga.) Mills have purchased **Crawford (Ga.) Cotton Mill,** a 7,000-spindle plant which has been idle for about two years, and will place the mill in operation this month.

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Monroe (Ga.) Cotton Mills have had plans prepared by Robert & Co., Atlanta, for new building 98x124 ft.

Scottdale (Ga.) Mills have installed new stoker equipment from the McBurney Stoker & Equipment Co., Atlanta, Ga., Copes water regulator and Fisher pump governors.

West Point (Ga.) Mfg. Co. has purchased from the H. & B. American Machine Co., Pawtucket, R. I., new spinning equipment for its mills at Lanett and Langdale, Ala., including 73 new long-draft frames, change-over equipment for 39 existing frames, and four large package long-draft frames

Lane Cotton Mills, New Orleans, La., has awarded the contract to George J. Glover Co., Inc., New Orleans, for an additional story to Plant No. 6, 54x130 feet. Favrot & Livaudias, architects.

Balto Looms, Inc., Baltimore, Md., has leased part of the old Manhassett Mfg. Co. mill in Putnam, Conn., and will remove to that community, continuing manufacture of its line of fancy cotton fabrics.

Erwin Cotton Mills, Durham, N. C., have placed an order with the Waltham (Mass.) Watch Co., for 5,400 Waltham two-shift pick counters, which will be installed on the looms of the company's plants. The company is also planning an expansion and modernization program at its West Durham bleaching plant, including one-story addition and installation of machinery.

Cape Fear Cotton Mills, Fayetteville, N. C., weaving department leased to the Morgan Cotton Mills, Inc., Laurel Hill, N. C., was put into operation June 26.

Travora Mfg. Co., Graham, N. C., is constructing an addition to the weave room.

Chatham Mills, Pittsboro, N. C., recently announced plans for erection of an addition to cost about $35,000.

Cleghorn Mill, of Spencer Corp., Rutherfordton, N. C., has installed 12 new cards.

Eton Mills Co., Shelby, N. C., recently awarded contract to Potter & Shackelford, of Greenville, S. C., for building addition and conversion of basement previously unused. J. E. Sirrine & Co., of Greenville, are the engineers in charge.

Bodell Lace Co., Pawtucket, R. I., has let contract to build a new two-story addition, 65x120 ft., reported to cost close to $35,000, with equipment.

Manville-Jenckes Co., recently reorganized, has formed six subsidiary companies to take over its Rhode Island properties. They are: Smithfield Village Corp., Woonsocket Village Corp., Social Corp., Globe Corp., Jay Tee Corp. and Bernon Corp. Officers of the new company are: President, George R. Urquhart; vice-president and treasurer, Zenas W. Bliss; vice-presidents, John A. Baugh, Jr., and John R. Crawford; secretary, J. W. Baker; assistant treasurer, Samuel Lipson.

Kershaw (S. C.) Cotton Mill, is building an addition, 75 x 400 ft., to accommodate 15,000 additional spindles and complementary weaving equipment.

LaFrance (S. C.) Mills plans to reopen its old spinning mill as soon as machinery can be properly conditioned.

Lancaster (S. C.) Cotton Mills, operating plants in Lancaster, Fort Mill and Chester, S. C., and the **Kershaw (S. C.) Cotton Mills,** will be merged, according to plans to be submitted at stockholders meetings, July 20. The new corporation formed by the consolidation, a name for which has not been selected, will include the mills developed and operated by the late Col. Leroy Springs, the combined equipment being about 350,000 spindles and 9,000 looms on print cloths, narrow sheeting, wide sheeting, broadcloth, sheets, pillow cases and mechanical goods. The list of officers in the new corporation follows: Capt. Elliott White Springs chairman of the board and president; Waddy C. Thomson, T. Y. Williams and John T. Stevens, vice-presidents; H. R. Rice, secretary.

Pacolet (S. C.) Mfg. Co. is adding 48 frames to spinning equipment in Mill No. 3.

Cannon Mills Co., York, S. C., will replace 10,000 spindles of obsolete equipment with modern spinning frames.

Dorothy Cotton Mills, Benton, Tenn., has acquired the mill properties of the **Prendergast Cotton Mills** for a figure said to be $67,000, payable by Jan. 1.

Dixie Mercerizing Co., Chattanooga, Tenn., has awarded general contract to the Capitol Construction Co., Atlanta, Ga., for new two-story addition to spinning mill at Lupton City, Tenn., 85x107 ft., to cost over $50,000, with equipment.

TEXTILE WORLD'S

Wool Digest

ONE of the most difficult basic problems arising in connection with the formulation of codes under the recovery act, is the relationship among the several different sections of an industry which go to make up an integrated whole.

The wool industry is particularly a case in point. So large a proportion of its product goes to the cutting-up trade that it is essential to guard against variations in codes which might destroy the state of relative balance. Taking the matter of length of work-week alone, serious consequences could result in this way. If, say, goods manufacturers decided upon a maximum number of hours which did not bear approximately the same relationship to hours in the cutting trade which had previously existed, supply-demand balance could be sadly disturbed. Equally important is this consideration in the matter of trade practices.

The closest contact between the two groups is essential during the preparation of their respective codes, if pitfalls are to be avoided.—*Editor.*

Wool Industry Nears Completion of Code

The wool industry, now well organized under the National Association of Wool Manufacturers, is progressing toward completion of its code as we go to press, after which Washington hearings will be held and its details adjusted for final acceptance.

Of course maximum hours of labor and minimum wages have been the focus of the code and considerable difference of opinion has been evident in preliminary meetings. This difference led to a broad statistical survey to arrive at a valid opinion on necessary number of machine hours to turn out the average seasonal requirements. It was believed that a greater number of spindle hours will be necessary than loom hours to maintain a balance between the two. Probability seems to favor a 36-hour week as General Johnson has intimated that few industries would be likely to qualify as did the cotton industry for a 40-hour week. With minimums of $12 and $13 in the cotton industry, somewhat higher wages may be expected in wool if previous parities are to be maintained.

Committees of wool manufacturers have already contacted the Recovery Administration on their proposals and the code when presented will doubtless be in close approximation of final form. Executives in New York believe that the radically shortened hours and higher wage will mean at least another 25% advance in price of goods. Most mills have had the foresight not to sell beyond Labor Day and they are consequently in a position to adapt themselves to the conditions which arise.

Shorter Hours Spur Sales of Properties

The shorter hours of operation possible under the National Industrial Recovery Act have created a small boom in the purchase and sale of mill properties; along with the reopening of some plants that have been idle.

As might be expected, concerns that have geared their selling organizations to production schedules in excess of those allowable in the future—and that have been able to achieve such schedules a good part of the time—have been inclined to take over mills less happily situated as regards the sales set-up; the object, of course, being to avoid a decrease in volume of business.

Among the transactions that are reported to have taken place are: purchase of the Davis & Brown Woolen Co. (96 looms, 2,000 woolen spindles), Uxbridge, Mass., by the Uxbridge Worsted Co.; purchase of the Saxony Mill (4 sets) of the James J. Regan Mfg. Co., Rockville, Conn., by Hockanum Mills Co.; purchase of the Jarret Bros. Co. (8,000 worsted spindles) and the Villa Nova Worsted Co. (8,700 worsted spindles), both of Woonsocket, R. I., by interests allied with the Bell Co. of Worcester, Mass.

The Philmont mill (14,000 worsted spindles) of Guerin Mills, Woonsocket, has been started up after being idle for several years, as has the Angus Park Mfg. Co. (9 sets, 60 looms), of Glastonbury, Conn. Reports of the reopening of several small, country-town mills cannot be verified.

Equipment manufacturers have had a good call for machinery to replace slow, obsolete models, and a number of supply manufacturers, particularly those whose product is standard, have experienced a spirited demand based on the expectation of higher prices. Quite a few dealers in second-hand machinery and supplies have been unusually cheerful of late; most of the business in this line being on the basis of equipment in fairly good condition that one mill does not need but another does need to secure a balance of machinery—junk equipment still being regarded as junk.

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Market Rests While Mill Activity Continues

There is less activity in wool goods on the market, but in manufacturing centers mills are running at a rate not seen for many years and an immense yardage is being turned out. Woolens are sold ahead on a par with worsteds, though the latter took the lead at the start.

Clothiers have covered into September with an energy that would seem to anticipate a real shortage of goods, yet the production rate now current will, according to students of the market, create adequate yardage for all. Women's wear users have been similarly anxious to place orders, and in this field the fact that certain mills turned to men's wear when trade was slack some months ago is to be considered in making overproduction for the present unlikely.

Credits are a new puzzle to sellers, being complicated by the 40 to 60% increase in value of yardage over the low point. Cutters who found a certain line of credit adequate for their needs last season must now have the limit raised if they are to obtain enough goods. Mills have faced a similar problem in reference to purchases of raw wool. The fact of the rising market, however, which gives added asset values to inventories is helping the situation.

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Worsted Yarns Rise Again

Worsted yarns rose sharply in price during June, particularly in the latter half of the month, when spinners were satisfied with their forward orders and were willing to sell only if the price gave fair protection against future eventualities. Sections of the market remained active, though on the whole trade tapered toward the end of the month. Knitters were reported more active than weavers.

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Tops Quieter at New Highs

Wool tops made new high records for the movement during June. The December contract closed at 84.50c. on June 2 and at 93.10c. on June 30. The same contract closed at 69.60c. on May 5. Boston spot tops were at 95.50c. on June 30, against 86.50c. on June 2 and 72c. on May 5. For eleven consecutive

weeks the New York Wool Top Exchange has shown an advance. Trade, however, was lighter as June closed with the industry generally waiting for decision on its code under the recovery act and unwilling to buy or sell in any volume beyond September. Since July 3 wool top futures have been quoted with only one digit to the right of the decimal; a one point advance meaning 1/10c. instead of 1/100 of a cent, as formerly.

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Wools Called Sound On Advanced Basis

Raw wool continued to advance steadily through June, and at the beginning of July all kinds of domestic wools were quoted at the high prices of the recovery. Comparing the average with that of a year ago the advance is approximately 100%. The upward march is shown in the group clean price of territory wools. The average price for January-March was 38.9c.; April, 41.2c.; May, 53.8c.; June, 64.1c.; and on July 1 it was 65.9c.

The market is held well in check, and although higher prices are pending there is no indication of any runaway market. From now on a considerable part of the wool to be sold will be the raw material pledged by loans to the R.A.C.C. No price has been put on these wools, but according to the Farm Credit Administration plan they are to be sold in pro rata amounts and at similar prices as obtained on free consignments or on wools bought outright.

The wool trade regards the raw material as in sound and healthy position. There does not seem anything in the outlook to indicate lower values. While domestic wool is now close to importing point, the fact that there will be little or no American-style foreign wools available for some time leaves an open field for higher prices on domestic wools, provided the goods market can absorb the advances.

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Mill Activity At High Peak

Woolen and worsted mills, particularly the large units producing staples, have been extremely active of late. As an example, for the first time in years all of the American Woolen units around Lawrence (with the exception of the Washington mill, which has been closed) are gay with lights at night.

Although most mills bought wool rather heavily when the price started skyrocketing, the rate of consumption has been such that it is estimated that a good part of the really low-priced wool has already been used. Some manufacturers, in fact, are inclined to bewail the fact that they were in such a rush to sell fabrics along in April and May; believing that if they had turned down a few orders they could have secured business a week or two later at a better margin. Mill men are reticent concerning the extent to which they expect to operate under the restricted hours allowed by the National Industrial Recovery Act, particularly since market demand is such a factor.

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Rags Strong at New Highs

The woolen rag market moves more regularly now than when the rise first started in April. It has given over its former excited and uncertain tone for one of general strength, with materials in firm hands and buyers more cautious. Prices are 50 to 100% above late March. Softs were at 7½c. in June, with some sales at 8c. White softs were at 26c., light hoods at 17c., fine light merinos at 16c., blue serges at 9c. and dark worsteds at 6½c. White sweater waste has touched 48c.

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Wool Consumption Jumps

Wool consumption for the month of May (excluding carpet) was 16,974,000 lb., clean equivalent, as compared with 10,523,000 lb. in April and 6,167,000 lb. in May, 1932. Since Jan. 1, consumption this year, through May, was 63,923,000 lb., clean equivalent, against 49,998,000 lb. for a similar period in 1932. On the old basis of grease equivalent, which was abandoned on Jan. 1, May consumption (including carpet) was 46,898,246 lb., as compared with 16,519,325 lb. in May, 1932.

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Details of Wool Highway Construction in Australia

Experiments in the use of low-grade wool for binding surfaces in highway construction in Australia referred to in a previous issue, are continuing. The wool is spread over the road about three inches deep, or 10 lb. to the square yard. The wool is then covered with two inches of soil to form the running surface. The wool used costs about 2.15d. per lb.

The short section of the highway already prepared lies in the black soil region which is said to be impassable in wet weather, and in a locality where suitable road-building materials are not readily available. The rainy season, now due, is expected to prove the utility of the new "wool" highway.

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Wool Mill News

Hockanum Mills Co., Rockville, Conn., have purchased the Saxony Mill of the James J. Regan Mfg. Co. The transaction includes 170,000 feet of land and a modern 2-story unit housing spinning and carding departments, which will be started up at once.

Wyandotte Worsted Co., Pittsfield, Mass., has leased the Yantic (Conn.) mill formerly operated by the American Woolen Co. and is preparing to start operations there. Thomas Grieve will be agent.

Uxbridge (Mass.) Worsted Co. has purchased the Davis & Brown Woolen Co. mill and plans partial operation. Narrow looms will be moved to the mill from Danielson, Conn.

Felters Co., Johnson City, N. Y., is considering construction of a new one-story mill addition.

Roy Woolen Mill Co., Watervliet, N. Y., has been transferred to Anthony M. Delcarlos, Providence, R. I.

Chautauqua Worsted Mills, Jamestown, N. Y., started up June 26, after having been closed for several months.

Chatham Mfg. Co., Elkin, N. C., is installing a 1,000 kw. General Electric generator and two new Babcock & Wilcox boilers, with auxiliary power equipment, for the generation of electric power. This plant is expected to be completed not later than Sept. 1. Lockwood Greene Engineers, Inc., Spartanburg, S. C., are in charge.

Victoria Mill property, Thornton, R. I., has been sold at auction, the main mill building going to Edward F. Miner, Rockville, Conn.

Stokes Bros. Worsted Co., Inc., Woonsocket, R. I., has been incorporated by Roscoe N. Stokes of Cranston, R. I., and Ralph S. and Marty G. Stokes of East Providence, R. I.

Thomas Smith, former agent of the Samoset Worsted Co., is operating the mill formerly owned by Jarrett Bros. at Woonsocket, R. I.

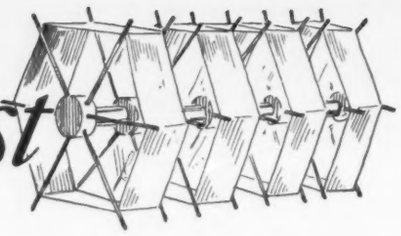
Villa Nova Worsted Co., Woonsocket, R. I., has been purchased by Merle Bell of Worcester, Mass., who acted for the same interests that recently bought the Jarrett Bros. Mill in Woonsocket.

Rock River Woolen Mills, Janesville, Wis., will be reopened under control of James B. Taite and Allyn Warren.

Horn Brothers Woolen Co., Ltd., Lindsay, Ont., is planning construction of new one-story addition, reported to cost about $30,000, with equipment.

TEXTILE WORLD'S

Silk Digest



IT is easy enough to understand rapidity of the price advances made in broadsilks in June. A market long starved for anything approaching a fair price, runs away quickly when the turn comes.

Nevertheless, the danger threatened by unbridled price-skyrocketing cannot be over-emphasized. Always, it is serious as a sure forerunner of reaction and collapse. Today, there is another angle. The administration has pledged itself to attempt to check just such a tendency. Industries which must travel to Washington during the next few months, and debate codes, might figure that it is good strategy to go down with as clean a record as possible.—*Editor.*

Major Silk Code Nearing Completion

Activities of the silk industry toward meeting the requirements of the National Industrial Recovery Act were numerous during June, and indications pointed toward early completion of a general code. The silk and rayon weaving industry, a major group, agreed on wage and labor provisions at a meeting of the planning committee of the Silk Association in New York, July 6. The labor clauses tally with the cotton code on numerous points; they provide for 40-hour week; $18 minimum for weavers and warpers in North and 10% less in South; unskilled labor minimum $13 North and $12 South; machine operation maximum two 40-hour shifts.

Under like auspices, planning committees were appointed by four additional branches of the silk and rayon industries, namely, the silk and rayon converters, ribbon manufacturers, hat band manufacturers and thrown silk dealers. These committees are developing programs based on trade data, and the individual programs will be incorporated in the major code for the industry, which is to be submitted to the Washington authorities.

The Silk Association also announced the formation of a group to draw up a code for the special requirements of manufacturers of special fabrics. The special fabrics group held a meeting at the Silk Association headquarters in New York early in June, and a committee was appointed to draft standards of fair competition. This committee began work at once and will report back to the Silk Association on completion of its task.

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Velvet Prices Rising

June was a distinctly bullish month in the velvet market. Prices of transparents advanced from $1.35 to $1.75 per yd., by leading manufacturers on June 13, and this was followed at the beginning of July by reports that further advances were in effect. The tone of the pile fabric market has been firm for some time, due to the very cautious production policies followed by manufacturers. The advance was declared to reflect the recent rises in raw materials levels.

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Silk Ass'n Reorganizes; Gerli, Ill, Resigns

Reorganization of the Silk Association of America, Inc., so as to provide a federated association for all allied interests is the duty of a special committee appointed at a meeting of the board of managers on June 21. The committee consists of Charles L. Auger, National Silk Dyeing Co.; Charles Cheney, Cheney Bros.; Paul C. Debry, Duplan Silk Corp.; James A. Goldsmith, Hess, Goldsmith & Co., Inc.; H. Schniewind, Jr., Susquehanna Silk Mills, E. J. Stehli, Stehli Silks Corp.

Action on the resignation of Paolino Gerli, as president of the association, previously submitted, was deferred pending the report of the committee on its recommendations. Mr. Gerli's retirement step was understood to be prompted by ill health. He became president of the Silk Association in March, 1932. It was reported in early July that the association heads favored the idea of a salaried president to succeed Mr. Gerli, and that Paul Hyde Bonner, former vice-president, Stehli Silks Corp., was being discussed for the post.

A committee to make arrangements for the Silk Association's sixty-second annual dinner, which will take place at the Waldorf-Astoria Hotel, New York, on Jan. 18, 1934 was appointed as follows: Louis F. Auger, James C. Black, James A. Goldsmith, Jr., John P. Maguire, and Harold Rubin.

Fabric Mills Tighten Prices

Broadsilk weavers entered July in a healthy position, thanks to satisfactory clearance of summer stocks, and advancing prices on early fall lines. Price rises were due partly to the strength of the primary market and partly to active demand. Velvets, both transparent and novelty, have been exceptionally popular, with the larger mills reporting heavy bookings through the latter part of June. The price advances on velvet stimulated rather than retarded sales, and mills rejected considerable future business because of the belief that enactment of the Recovery Act will increase labor costs. Very few of the important companies were accepting business more than 30 days ahead, and plans were under way to insert protective clauses in all future contracts.

The unusually wide and attractive range of transparent and novelty velvets this season excited exceptional attention among cutters and at the end of June, shortage of some more popular numbers was reported. In colors, current interest centers on black, brown, wine and green. Corded weaves are in good call and mills look for increased demand for these fabrics later. Fall prints were not being shown in any real quantity, most firms planning to hold off until end-July.

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Yarn Prices Reflect Rise

With prices approximately 50c. above early June levels, throwsters entered the current month much encouraged and hopeful of sustained profitable business. Buying was active throughout June, some firms covering 60 to 90 days ahead. Numerous firms discouraged future business, to protect themselves against any increase in labor costs arising from the operations of the Recovery Act.

Both weavers and hosiery knitters placed substantial orders for yarns, and some throwsters found difficulty in filling contracts. Toward the latter part of June, demand for 20/22s took a big jump and the moderate stocks available were cleaned out in numerous mills. Throwsters are operating on capacity basis for the most part. Spot orders were still being accepted by most firms at the end of June, but futures were discouraged except when the contract included a protective clause.

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Europe Plans Silk Campaign

Believing that the silk industry of the world has endangered its prestige by relying too much on its established position of the past the International Silk Federation, which has headquarters in Paris, is pushing plans for an international campaign to stimulate con-

sumer understanding of and demand for silk merchandise. The campaign is in charge of the International Committee appointed by the Federation; leading silk groups in Italy, France, England, Switzerland, Germany and other European countries will participate, it is understood. An invitation to the American silk industry to participate in the drive is being extended by Giovanni Gorio, royal commissioner of sericulture for the Italian Government, who recently arrived here.

Meanwhile, nothing definite has developed regarding the plan of the Japanese silk industry to hold a silk campaign in this country.

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Market Steadies After Hectic Spurt

Hectic advances and a decidedly speculative influence featured the raw silk market at the opening of June, but the trading steadied somewhat as the month progressed. The upward trend continued, and a gain of about 60c. was registered in the four-week period. Crack double-extra 13/15 white rose from $1.65 on May 27 to $2.25 on June 27, which increase was fairly typical of the market. Speculative buying was lessened, though far from eliminated at the end of June, and importers were hoping that July would find the market in steadier condition. Fears of further skyrocketing which would injure trading were expressed by various factors.

Market tone is decidedly improved, however. Broadsilk mills seem convinced that silk is up to stay, and this feeling is shared by hosiery mills.

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May Silk Deliveries up 43%

Raw silk imports during May were 29.2% higher than during May 1932, the Silk Association of America, Inc., reports. May deliveries of raw silk to mills showed an increase of 43.2% as compared with the same month of last year. Raw silk stocks at warehouses on May 31 were 40,125 bales as compared with 59,159 bales on May 31, 1932.

May imports of raw silk were 44,238 bales as compared with 41,134 bales during the previous month and 34,233 bales during May, 1932. Deliveries to mills during May were 47,151 bales as compared with 41,910 bales during the previous month and 32,923 bales during May, 1932.

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War on "Racketeers"

In an attempt to eliminate "rackets," frauds, concealment of assets, and other dishonest credit practices which cause considerable losses to the textile credit world annually, 25 cases of bankruptcies and insolvencies involving commercial frauds were investigated by the Fraud Prevention Department of the National Association of Credit Men, last year. This was made possible through special fraud prevention funds offered by the Uptown Credit Group of the Textile Industry, affiliated with The Silk Association of America, Inc. Fifteen cases were submitted to and are now pending in the Federal and State Courts, and several indictments and convictions have been obtained, it is announced by the Silk Association.

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Show Fur Fabric Styles

Apparel possibilities for fur fabrics are widening rapidly, as was evident late in June at a showing held by Shelton Looms, Sidney Blumenthal & Co., in their New York showrooms. The collection, styled by Jacob Rapaport, included numerous fur fabric garments.

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Silk Demonstration at Fair

Executives of silk-consuming plants, many of whom were in Chicago to attend the annual golf tournament of the Chicago Yarn Men's Circle, saw an interesting silk demonstration, including the reeling of silk from the cocoon, at the Century of Progress Exhibition, June 28. The demonstration took place at the Japanese Exhibit, and was arranged by C. Walter Seidel, representing E. Gerli & Co., Inc., The Duffy Silk Co., and Kahn & Feldman, Inc., in Chicago.

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Silk Mill News

Haskell Silk Mill, Westbrook, Me., which recently closed, may be taken over by local business men who seek to acquire the mill and equipment and arrange for immediate operation of the plant. Armand O. LeBlanc, one of the sponsors of the plan, states that the mill can be purchased for $50,000 or leased for a year for $2,500.

College Weavers, Inc., Northampton, Mass., is now operating 400 looms and has lately added 8,000 spindles. **College Throwsters, Inc.,** operate a plant at Haydenville, Mass., nearby, and a mill No. 3 at Florence with 8,000 spindles is owned by the same interests. C. Stanley Marshall, formerly with DuPont, is general manager of the three plants. Herbert Collonan, formerly with Beoli Mills of American Woolen Co., is in charge of throwing at the Northampton plant.

Best Made Warping & Winding Co., Inc., Paterson, N. J., has been organized with capital of $125,000, by Oscar Berman and Abram Waks, 136 Washington Street, Paterson, to operate a local silk mill.

French Art Mills, Inc., Paterson, N. J., have been organized by Harry Klotz and Filbert I. Rosenstein, First National Bank Building, Paterson, to operate a local silk mill.

Paterson (N. J.) Silk Throwing Co., Inc., has added 3,500 spindles to be run entirely on rayon crepe twists.

Onondaga Silk Co., Inc., Ogdensburg, N. Y., of which Phillip A. Vogelman is president, acquired the properties of the R. & H. Simon Corp., in Easton, Pa.

Duplan Silk Corp., Hazleton, Pa., has purchased an additional 300 Crompton & Knowles shuttle-changing, super silk and rayon looms following the initial installation of 200 which was completed last March.

Susquehanna Silk Mills, Sunburg, Pa., and elsewhere will continue in operation until Oct. 4, as authorized in a court order on application of the receivers. Meanwhile a plan of reorganization of the business may be developed.

Clinton Silk Co., Central Falls, R. I., has leased space in the former building of the Hadley division of the American Thread Works, now owned by the city, in Holyoke, Mass., and purposes to employ 120 workers as soon as machinery has been installed.

Cadillac Silk Mills, a new corporation, has been granted a 10-year tax exemption by the Cumberland, R. I., Town Council.

Royal Weaving Co., Pawtucket, R. I., plans construction of new one-story addition, reported to cost over $20,000, with equipment.

J. Lentert, Murfreesboro, Tenn., general manager of the Welwood Co., with local plant, is also in charge of a new silk plant which is operating in an unused portion of the Welwood plant. The new unit will run 90 looms.

Dan City Silk Mills, Danville, Va., have been sold to I. Smith, of Paterson, N. J., for $9,025, the best bid of five received by C. G. Holland, trustee of the plant. The machinery consisted of 116 looms and subsidiary equipment.

F. A. Alain, president of the Victoriaville (Quebec, Can.) Board of Trade, stated that a new silk manufacturing concern would be operating at Victoriaville within a short time.

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TEXTILE WORLD'S

Rayon Digest

WE have had occasion in the past to criticize merchandising policies in the synthetic fiber field. It is pleasant to be able to praise.

In contrast to the runaway market in other branches of the industry, the orderly advances made in rayon have been a thing of beauty. The inherent stability of a man-made fiber, as compared with a product of nature, has been demonstrated graphically.

Unfortunately, that stability has not always been permitted to obtain. The price-cutting which featured the last year or two represented a costly debauch. However, there is apparently compensation in the sanity with which restoration of levels is proceeding.—*Editor.*

Yarn Firms Accept September Orders

The chief rayon firms began accepting September orders immediately after Independence Day, after a month of continued high-pressure buying. Capacity operation throughout June failed to yield sufficient yarn to meet the demand, and numerous companies are oversold through August. While practically all deniers were active, interest centered on 300s, 150s, and 100s. With weavers placing the bulk of the business, 100 and 150 denier held leadership. Underwear mills bought moderately and the hosiery industry placed only a minimum of orders.

Acetates were in strong demand, and indications were that, for certain of the newer acetate-producing companies, June sales would set a new high record. Surplus yarn stocks in plants are down to minimum levels; one major company is operating on a reserve of about 1,500,000 lb. as against 4,500,000 lb. reserve in pre-depression years. This is significant, producers pointed out, since 4,000,000 lb. used to be regarded as the lowest practicable surplus.

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Tubize Again Leads In Rayon Price Rise

Rayon yarn prices continued their upward climb through June and early July, and indications pointed to further advances late this month. The latest advance, announced by Tubize Chatillon Corp., on June 28, as of July 1, raised all numbers 5c., bringing 150 denier 40 filament, viscose, to 65c., or 15c. above the record low of 50c., to which rayon fell on April 3. The newest Tubize increase brought its acetate yarn prices up to those of the Celanese Corp., and on June 30 Celanese announced a further 5c. advance, which maintains the differential that has been a fixed policy of the Celanese company. It was reported June 29 that Delaware Rayon Co. and Belamose Corp. had already revised their lists to conform to the higher level set by Tubize, and other producers were expected to do likewise.

The earlier Tubize advance, announced on June 7, brought 150 denier to 60c. The Viscose Co. and the DuPont Rayon Co. adopted the scale set by Tubize later that month, as did the remainder of the industry. For about 10 days, therefore, yarn prices in the industry were approximately uniform.

The June 28 increase is not expected to have any material effect on current buying, as most producers are booked to capacity to the end of August. The advance raises 100 denier, nitro cellulose (Chardonize) skein yarn, to 87c., 125 denier to 75c. and 150 to 70c.

The Sanconize nitro yarns rise to $1.20 for 50 denier and 65c. for 175 denier. In the viscose division, 75 denier advances to 97c., 100 denier to 82c. and 125 to 70c. Of the acetate group, the 100, 120 and 150 denier, hosiery yarns, are now $1.00, 95c., and 90c. respectively; and the 100, 120 and 150 denier of the weaving and tricot group are $1.05, $1.00 and 95c. respectively.

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Yarn Association Plans Progressing

Plans for the formation of a trade association of yarn producers to develop a code in line with the requirements of the National Recovery Act, were still in process of formation at press time. The producers have held numerous conferences, looking to development both of an industry code, and a trade association. Early in June a temporary organization was created, of which Samuel A. Salvage, president of The Viscose Co., was made chairman, and E. R. Van Vleit, vice-president of the Tubize Chatillon Corp., secretary. Meanwhile formation of the National Rayon Yarn Processors Association to act on behalf of this division of the synthetic fiber industry was made known in New York on July 10.

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Weavers to Submit Code Shortly

Two major conferences with Recovery Act officials were held in Washington by the executive committee of the National Rayon Weavers Association, incident to the preparation of a code for the rayon weaving industry, and at the beginning of July, C. W. Dall, secretary-treasurer of the association, said rapid progress was being made. On its first trip to Washington, the executive committee obtained a preliminary understanding of the Recovery Act Administration's policy, and established relations with the administration on behalf of the association. The committee returned to New York and made an outline of the code which was later taken to Washington for suggestions on necessary revision.

At the end of June, the association was busy putting the code into final form, and it was expected that the program would be formally submitted to the Recovery Act Administrator within the next few weeks.

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Organon Compiles World Yarn Output

Compilation of the world's rayon production figures has been undertaken for the first time by the Tubize Chatillon Corp. and the record is included in the current issue of *Textile Organon,* published July 3 by the company. According to the figures world production aggregated 515,390,000 lb. for 1932, compared with 454,765,000 lb. in 1929, and with 76,765,000 lb. in 1922.

The compilation shows a continuous yearly increase in output with the exception of the 1929-30 comparison. The United States has produced from 25 to 30% of the world total in the last decade. The rapid ascendency of Japan is a feature of the first table:

Pounds (000 omitted)

	1932	1929	1922
United States	131,000	119,500	24,400
Italy	70,500	71,000	5,700
Japan	69,900	27,000	525
Great Britain	69,750	56,250	14,500
Germany	61,000	58,300	11,000
France	47,300	49,300	6,250
Holland	19,500	20,900	2,500
Belgium	9,600	16,000	6,600
Switzerland	8,800	11,600	1,900
Canada	7,100	3,750	.....
Poland	6,600	6,000	485
Czechoslovakia	5,700	4,625	625
All Others	8,640	10,540	2,280
Total	515,390	454,765	76,765

World Production by Years

1932	515,390	1924	145,950
1931	396,270	1923	108,060
1930	442,690	1922	76,765
1929	454,765	1921	66,000
1928	384,710	1920	55,000
1927	309,620	1919	44,000
1926	224,850	1918	35,200
1925	190,380	1917	34,100

Rayon Waste up 2 to 3c.

Rayon waste prices advanced 2 to 3c. during June, and the market entered July with prospects of further increases. Dealers reported a shortage of practically all grades of manufacturers' waste, with little likelihood of any early improvement as regards stocks. Demand was very active, the call extending through all grades. Garnetters were the chief buyers; very little business was being placed by combers. The lack of waste has created a firm seller's market and this situation is expected to continue through July, and probably longer.

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Yarns at a Premium

Mills seeking rayon yarns complained of an acute shortage toward the end of June, and this situation became so pronounced just before the holiday that some sellers of synthetic yarn were asking premiums for delivery, it was asserted. The shortage is felt most by mills seeking fill-in supplies in a hurry, as the sellers prefer to meet the needs of their regular customers, even though it means sacrificing premiums. The shortage is most acute in 100 denier and 150 denier.

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Phinney Heads Peddlers

The annual meeting, outing and dinner of the Rayon Peddlers' Association, which is composed of New England representatives of rayon companies, was held recently at the Warwick Country Club, Warwick Neck, R. I. Morris Phinney, of the Providence office of American Glanzstoff Corp., was elected president; other officers chosen were: Chester Scott, of American Enka Co., vice-president, and Dana Gillingham, of New Bedford Rayon Co., secretary and treasurer. E. E. Connor, of The Viscose Co., won the golf tournament with a score of 80 gross, 66 net.

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Japan Pushes Development Plans

Further progress by Japan in the extension of and stabilization of her rayon industry is indicated in two new developments. Plans are nearing completion for the merger of three Japanese rayon companies, the Asahi Kinuori Kaisha, the Nobeoka Rayon Co. and the Japan Bemberg Co., into a single producing company which will be the largest and most powerful rayon company in Japan, according to the May issue of the *Japanese Trade Review*. The periodical stated that a meeting had been called at which the final decision on the merger would be made. A bulletin issued in late June by the Department of Commerce, Washington, tells of the completion of plans by which the Yokohama Silk Exchange would deal in rayon yarn futures; this makes four rayon exchanges in Japan. It is explained that rayon exchanges have proved more feasible in Japan than in other countries because of the large number of Japanese dealers and the active trading between them.

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Rivitz Optimistic On Yarn Outlook

The stock of the Industrial Rayon Corp. has been placed on an annual dividend basis of $3 per share as against $2 previously, it was announced June 9 by Hiram S. Rivitz, president of the company. Mr. Rivitz added that Industrial has maintained the upward trend of earnings shown in the first quarter, and he commented that the prospects for the second half of the current year are favorable, "as the present trend is distinctly to firmer prices." On completion of present extension activity at the Covington, Va., plant, the company's productive capacity will be increased 20%, he said.

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Tubize Expands N. Y. Headquarters

The New York offices of Tubize Chatillon Corp. at 2 Park Ave. were moved early in July from the 18th floor to the 14th floor. It is estimated that the new offices will occupy about twice as much floor space. This expansion was made necessary partly by the creation of the knit cloth department which followed the firm's purchase of the Argus Knitting Mills, and partly by increased yarn business. The knit cloth division will include sample, display and stock rooms.

It is reported from Hopewell, Va., that rapid progress is being made in the installation of machinery in the company's new knitting, dyeing and finishing plant. It was expected that the plant would be in operation soon.

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Courtaulds Can., Wages Raised 33 1/3%

A wage increase of 33⅓% has been announced by the Courtaulds Co., Ltd., of Cornwall, Ont., manufacturers of rayon yarn. This Canadian company is now operating at capacity.

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Rayon Mill News

Celanese Corp. of America, Amcelle, Md., has begun superstructure for a new three-story addition to Building No. 4, used for solvent recovery, 75x118 ft., for which general contract was let to the Hughes-Foulkrod Co., Philadelphia, Pa. It will cost close to $75,000, with equipment.

Pepperell Mfg. Co., Fall River, Mass., is setting up a rayon weaving unit at its local plant in Mill A, formerly Granite No. 2.

Beldray Industries, Inc., to weave rayon, and **Beldray Throwsters, Inc.,** to throw it, have been formed in Belding, Mich., with the following officers: Frank M. Donovan, president; Walter S. Lambertson, secretary and treasurer; Floyd W. Cone, director. Lee Moore, who was with Belding-Heminway Co. for a number of years, has charge of the two mills.

Rayon Industries Corp., New York, has been formed to operate a group of rayon processing and fabricating firms including Norfolk (Va.) Weavers, Inc.; College Weavers, Inc., Northampton, Mass.; College Throwsters, Inc., Haydenville, Mass.; Beldray Industries Corp., Belding, Mich.; Beldray Throwsters, Inc., Belding, Mich.; and S. Levin & Co., Inc., New York. This group's present equipment is said to consist of 1,441 looms and 20,000 spindles.

Eton Mill Co., Shelby, N. C., E. A. Hamrick, president, is installing 104 rayon looms, purchased from the Crompton & Knowles Loom Works, Worcester, Mass. J. E. Sirrine & Co., Greenville, S. C., textile engineers and architects, in charge.

Reidsville Rayon Mills, Inc., Burlington, N. C., has been incorporated with authorized capital stock of $100,000, by J. Spencer Love, W. J. Carter, of Greensboro, N. C., and A. Glenn Holt, of Burlington.

Cleveland Cloth Mills, Shelby, N. C., have awarded contract to the Fiske-Carter Construction Co., Spartanburg, S. C., for the construction of mill addition, 120x282 ft., in which weaving equipment will be installed. Lockwood Greene Engineers, Inc., of Spartanburg, prepared the plans. Production will be expanded about 50% by the purchase of 100 Crompton & Knowles shuttle-changing, super silk and rayon looms.

Alta Vista (Va.) Cotton Mills, Inc., idle for a number of years, have been purchased by the Burlington (N. C.) Mills Co. and will be reopened for manufacture of rayon goods as soon as new equipment is installed.

TEXTILE WORLD'S

Knit Goods Digest

THE part played by Secretary of Labor Perkins in persuading the cancellation of the strike-call in Philadelphia hosiery mills, was a laudable and a wise one.

Quite aside from all questions of the issues involved in this or any other strike, it would seem utterly absurd that warfare should be initiated just when management and labor are trying to get together in Washington for the development of codes of action under the Industrial Recovery Act.

No one ever expects these two groups to see eye to eye. Nevertheless, it is true that both have suffered tragically during the last few years and that the first job on hand is a concerted move toward recovery. Strikes are the surest obstacles imaginable.—*Editor.*

Hosiery Mills, Union Agree on Code

Earl Constantine, managing director of the National Association of Hosiery Manufacturers, announced in New York, June 29, that substantial agreement had been reached between the representatives of the association and officers and representatives of the American Federation of Full-Fashioned Hosiery Workers, regarding the labor provisions of the hosiery industry's code. The hosiery manufacturers and the labor officials held a series of conferences in Washington during June, at which the various issues involving minimum wages, hours and working conditions were threshed out in detail. The conferences were presided over by officials of the National Recovery Administration.

Mr. Constantine's statement continues:

"Both the representatives of the workers and those of the industry are bound by mutual agreement to withhold the nature of the understanding arrived at until the hosiery code is drafted and is in form to be submitted to the industry for adoption."

He added that plans are being developed to call a general meeting in New York, July 12, of all hosiery manufacturers, at which time the code will be made public by both manufacturers and labor leaders.

"The negotiations between the manufacturers and the labor leaders," Mr. Constantine said, "proceeded in the finest spirit of cooperation and forbearance. The labor provisions of the code when published will doubtless appeal to the public as well as to the workers and manufacturers of the industry as a big social advance in keeping with the objectives of the National Recovery Act."

Knitwear Association Agrees on Code

Details of the code for the American Knitwear Association were agreed upon July 9, following a three-day meeting of the association, in Washington this month. This meeting was held at the Mayflower Hotel beginning July 6. Included with the executive committee attending, were the chairman of the various sub-committees of the association. Wages and hours to be incorporated in the code were the major points considered. One of the most significant steps taken at the meeting was to approve a plan to change the name of the association to "The Underwear Institute."

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Outerwear Industry Pushes Code Plans

Highlights of the code for the outerwear industry, as made public July 10 by the National Knitted Outerwear Association are: 40-hour week; two-shift operation totalling 80 hours; minimum wage $13, male and female; learners $9 to $12 during apprenticeship and no employment of minors under 16.

Decisive progress toward drafting a code for the outerwear industry was made during June by the various divisions of the National Knitted outerwear Association. A code for the men's wear group was outlined at a meeting of Brooklyn and Philadelphia manufactlurers, held in New York. The meting was under the auspices of the parent association, and the men's wear code, when drafted, will be submitted to that organization.

Those present at the meeting voted to scrap the practice of consignment selling, and expressed a strong desire to standardize wages. The following minimum wage scale was approved by the manufacturers present: mechanic knitters, $35 weekly; pressers, $25; female learners, $10; operators, $18; finishers $12; mechanic helpers, $15 and spoolers $15. One shift of 40 hours weekly was approved for incorporation in the code.

Progress was also reported by numerous other outerwear divisions. The headwear group at a meeting June 27, formulated a tentative code, providing for a 40-hour week and five 8-hour days. The association is understood to be considering revival of its code of ethics drafted at Chicago four years ago, for submittal to the Recovery Act administrator.

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Western Knitters Entertained by Chicago Yarn Circle

Hosiery and underwear manufacturers from all over the Middle West were guests of the Chicago Yarn Men's Circle at its twelfth annual golf tournament and outing at Medinah Country Club, near Chicago, June 28 and 29. A dinner and evening get-together featured Wednesday evening, and on Thursday tournament play of nine holes in the morning and eighteen in the afternoon was followed by dinner and presentation of prizes by O. J. Caron, of the Caron Spinning Co. and French Worsted Co., president of the circle. J. H. Petter, Hosiery Mills, Inc., Belding, Mich., received the annual cup awarded for low and net score. R. L. Frost, Allen A Co., had low gross score. Fred W. Frank, Celanese Co. and Dixie Mercerizing Co., is treasurer of the circle, and C. Walter Seidel, representing E. Gerli Co., Kahn & Feldman, and Duffy Silk Co., is secretary.

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Hosiery Cost Manual Issued

In view of the emphasis placed by the National Recovery Act on the need for periodical reports by mills of production and other operating costs, unusual attention centers upon the Hosiery Cost Manual, which has just been published by the National Association of Hosiery Manufacturers. This guide-book, comprising 38 pages of text and cost-cards, constitutes an outline of hosiery cost-finding for selling price guidance. It is for sale at $1 per copy. The book was prepared by W. J. Hinson, of Miller, Franklin & Co., and Ralph E. Loper of Ralph E. Loper & Co., and opens with a foreword by Earl Constantine, managing director of the hosiery association.

The book covers: normal production, prime elements of cost, development of correct yarn test weights, provision for yarn waste in processing, yarn prices, distribution of labor and expense and their application to product, control over operating expenditures, final cost calculation, provision for manufacture of imperfect hosiery, and other subjects.

Miss Perkins Halts Hosiery Strike

While the quick intervention of Secretary of Labor Perkins halted the strike ordered in the non-union full-fashioned mills of Philadelphia, June 22, the labor situation in the full-fashioned hosiery industry in Pennsylvania still remained unsettled at the end of the month. Strikes already in progress in Reading, Pa., and some parts of the South were claimed by officials of the American Federation of Full-Fashioned Hosiery Workers, to be extending. It is understood that the aim of the Philadelphia strike was to consolidate the position of the union in negotiations over the labor clauses in the code which the hosiery industry will submit to the recovery act administrator.

Meanwhile, the Reading strike which has affected seven hosiery mills, showed strong prospects of spreading. The possibility of a tie-up which would have far-reaching results became so pronounced on June 27 that hosiery manufacturers placed a full-page advertisement in Reading newspapers, urging hosiery employees to remain at work.

Despite peace efforts of Dr. B. M. Squires, mediator, 2,000 Berkshire Knitting Mills Workers, joined the forces of the hosiery strikers on July 5.

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Hosiery Mills Reject Future Orders

Following the caution of the National Association of Hosiery Manufacturers against heavy advance selling at current levels, numerous hosiery mills put the brakes on their acceptance of future business during June, and some firms withdrew their lines entirely. Buyers regard prevailing prices as bargain levels and have placed substantial business as far ahead as they could persuade manufacturers to take orders.

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Sportswear Mills Hold Joint Opening

Manufacturers of high styled knitted sportswear for women who sell to the retail trade set a precedent for their division on July 5, when they cooperated in showing their fall lines. The decision to have a uniform opening was reached at a meeting held June 12, under the auspices of the National Knitted Outerwear Association.

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Knitwear Ass'n. Names Woven Fabric Groups

Completion of the personnel of the committees which will be in charge of the Woven Manufacturers Division of the American Knitwear Manufacturers Association was announced on June 25. This division is a new branch of the association and embraces weavers of underwear fabrics. The branch will be in charge of Arthur M. Reis, of Robert Reis & Co., as chairman, and activity will be carried on through five committees as follows: Executive and steering committee—Arthur M. Reis, Milton Erlanger, of B.V.D. Co., and Wallace J. Ross, of Munsingwear Corp.; admission committee—Jules Leeds, Manhattan Shirt Co., chairman; code committee—A. E. Langford, Wilson Bros., chairman; cost minimum wage and maximum hour committee—Milton Erlanger, chairman; standardization committee—Wallace J. Ross, chairman.

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Knitting Mill News

John McCarthy, Harmony, Me., has leased a vacant building and will soon start operation of a knitting mill.

Hosiery Mills, Inc., Belding, Mich., has doubled production of silk hose since Jan. 1 and the silk mill is operating with several shifts daily, Jay H. Petter, president, has announced.

Foremost Silk Hosiery Mills have been organized by Leo Propper, former president of the Propper-McCallum Hosiery Co., to manufacture ingrain hosiery exclusively. The firm will own and operate two mills, Certified Hosiery, Inc., and Conrad Hosiery Co., both in Clifton, N. J. "Foremost" will be the brand name; the word "Propper" remains the property of the Propper-McCallum Co.

Well-Made Hosiery Mills, Inc., Paterson, N. J., recently formed by J. Saltenberger, Paterson, and associates, with capital of $50,000, plans operation of local knitting mill. New company will be represented by David Cohn, 115 Market Street, Paterson.

McEwen Knitting Co., Burlington, N. C., will erect one-story addition, 85x110 ft., adjoining main mill, for which general contract was let to Fowler-Jones Lumber Co., Winston-Salem, N. C. Estimated cost $100,000, with equipment.

May Hosiery Mills, Burlington, N. C., have purchased additional full-fashioned knitting machines costing $80,000.

Premier Hosiery Mills, recently organized at Denton, N. C., by Freemont Mendenhall, and Raymond McDonald, began operations June 29, with 42 knitting machines.

Bynum Berry, Drexel, N. C., will establish a small hosiery mill at Icard, N. C. Mr. Berry will install machinery in the J. W. Wilson building, including 12 to 15 machines and one looper.

Shurite Hosiery Mills, Inc., with office at Hickory, N. C., has been granted a charter of incorporation to manufacture hosiery of all kinds. R. G. Hafer, B. P. Murphy and Mildred Hafer, all of Hickory, are incorporators.

Adams-Millis Corp., Kernersville, N. C., is building an addition costing $50,000. Plans were prepared by H. V. Biberstein, architect, Charlotte, N. C.

Superior Hosiery Co., Lexington, N. C., which was purchased by John W. Lambeth, of Thomasville, N. C., at receivership sale several weeks ago, has been acquired by Charles L. Amos, of the Amos Hosiery Mills, High Point, N. C., and placed in operation.

W. P. Elliott Knitting Mill, Marion, N. C., has been organized and placed in operation by W. P. Elliott, formerly superintendent of the Marion (N. C.) Knitting Mills, Inc. Initial equipment includes 32 200-needle Scott & Williams B-5 machines, eight ribbers, five loopers and finishing equipment.

Franklin Hosiery Co., Philadelphia, Pa., has taken over former plant of the United States Rubber Co., Williamsport, Pa., totaling about 27,000 sq.ft. floor space which it will occupy. Equipment will be removed from Philadelphia plant.

Paragon Knitting Mills, Philadelphia, Pa., have awarded general contract to R. Gilmore, 3420 Walnut Street, for one-story addition to mill on East Collom Street.

Harriman (Tenn.) Hosiery Mill is building an addition to its plant.

Johnson City (Tenn.) Mills are constructing an addition which will increase the output from 2.000 to 2,500 dozen hose daily. This new unit will be ready by July 15.

Silver-Knit Hosiery Corp., Kingsport, Tenn., has moved its plant to High Point, N. C.

Pannill Knitting Co., Martinsville, Va., recently purchased the latch-needle equipment and other machinery of the Miami Valley Knitting Co., Hamilton, Ohio, and is installing it in the Martinsville plant.

Knit-Rite Hosiery Mills, Princeton, W. Va., will soon open a plant there. The officers are: Lowery G. Bowling, president; J. C. Dobson, vice-president and manager; W. G. Shuff, secretary.

Brampton (Ont., Canada) Knitting Mills are erecting a 2-story brick addition.

TEXTILE WORLD'S

Processing Digest

THE formation of the National Textile Processors Guild, Inc., was a constructive and logical step. Offering as it does a medium for all types of processing companies except cotton finishers and similar well-organized groups, the Guild is the answer to a difficult problem. The many branches of this field would fail of proper contacts at Washington if they tried to organize into separate associations. Furthermore, many of the plants perform more than one kind of service and would have to affiliate with a number of groups.

There is a great opportunity in this field for a strong coordinating influence. Those who have the industry's interests at heart will hope that the Guild shall prove to be such an influence.—*Editor.*

Form National Textile Processors Guild

Organization of the National Textile Processors Guild, Inc., took place at a meeting held last month in New York. This association was formed for the purpose of coordinating, so far as possible, various divisions in the dyeing and finishing industry. An immediate aim of the guild is to arrive at a trade-practice code which will take into account the conditions peculiar to each division or group.

Groups thus far represented include processors of cotton, silk, rayon, woolen, and worsted yarns; and dyers and finishers of knitted and woven woolen and worsted piece-goods. Each group will have its own executive committee and code committee, and will be afforded equal representation on the board of directors of the central organization. Stanley Stager, who has been selected as chief executive of the guild, has his headquarters at 45 East 17th St., New York.

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Silk Dyers Prepare Code

A tentative code governing the trade practices of the silk dyers, printers, and finishers has been formulated by the Institute of Dyers and Printers. While the majority of the larger companies are in favor of its adoption, some of the smaller companies have not yet given it their approval.

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Finishers Code Nears Completion

Activities of the National Association of Finishers of Cotton Fabrics during the last month have been focused on the development of a trade-practice code. The organization has held several meetings to discuss this matter and to work out a plan which will be equitable to all members, and at the same time acceptable to the Administration.

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Sulphonated-Oil Manufacturers Developing Code

Steps were taken by the Sulphonated-Oil Manufacturers Association, at a meeting held recently in New York, to organize for cooperative action under the provisions of the National Industrial Recovery Act. The legislative committee was empowered to draw up a code of trade practices, and Secretary Harold B. Sweatt was instructed to secure data on wages and hours of labor. C. P. Gulick, president of the association, outlined the provisions of the act, and pointed out some of the way in which it changes the basis on which business has been done in the past.

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Screen-Printed Fabrics

Some indication of the advances made in screen printing in this country is afforded by the accompanying illustration of a linen drapery fabric printed with an intricate multi-color pictorial design by the Warwick Print Works, Inc., Bound Brook, N. J. This and other complicated patterns show the progress in technique of registering screen-printed designs. Another particularly effective fabric produced by this company is a shower-bath-curtain material of rayon having a single-color geometrical design 68 in. long, which simulates a draped curtain with tie cords.

The Warwick Print Works confines its work to the screen-printing (and finishing) of cottons, rayons, linens, etc.; the plant consisting of three buildings of 10,000 sq.ft. each—two housing the printing equipment, and the third the finishing machinery. It is interesting to note that this company is printing seventeen-color designs as contrasted with sixteen-color prints turned out by an English firm and mentioned in our May issue. No difficulty is encountered in obtaining as fine details as are possible in wood-block printing. In many cases with extremely fine designs photographic screens are employed to prevent loss of detail.

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Sanforizers Consider Merchandising Problems

Questions connected with the merchandising of Sanforized fabrics were discussed at a recent meeting of the finishers licensed to produce preshrunk materials of this type. At the same meeting, H. G. Zervas, of Lewiston Bleachery, was elected chairman of the group, which is a division of the National Association of Finishers of Textile Fabrics. One of the major problems of the Sanforizers is to reconcile the merchandising policies of the job and corporation plants in so far as they relate to preshrunk fabrics.

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New Dyestuffs

General Dyestuffs Corp. announces the following new products:

Algosol Gray IBL, a dyestuff of the Algosol range which, dyed or padded on cotton and rayon by the nitrite process, gives dyeings of very good fastness properties, and excellent levelness and penetration. It is suitable for application to cotton, rayon, silk, and wool.

Immedial Red Brown CL3R, a sulphur dyestuff of reddish cast, good fastness to light and boiling, very good fastness to washing, and fastness to chlorine remarkable in a sulphur dyestuff.

Carbic Color & Chemical Co., Inc., announces the following new product:

Indigosol Gray IBL, a stable vat dyestuff of very good solubility which produces bluish gray shades of very good fastness to light and excellent fastness to washing, boiling, and chlorine on cotton, rayon, and mixed fabrics of these fibers.

Little Succeeds Thompson at U. S. Finishing Co.

Leonard S. Little took office as president of the United States Finishing Co. on June 30, succeeding Henry B. Thompson, Sr., who became chairman of the board. Re-elected to office in the company were John G. Bausher and Henry B. Thompson, Jr., vice-presidents; and Grant A. McClatchie, secretary and treasurer. Executive offices of the organization are now located in Providence.

Since 1928 Mr. Little has been with the Slatersville (R.I.) Finishing Co. as general manager and (for the last three years) vice-president. After his graduation from Brown University in 1907, he became assistant superintendent of the print-works department of the Pacific Mills, Lawrence, Mass., and later was appointed superintendent of the Pawtucket branch of the United States Finishing Co. and was also chemist and dyer for the Apponaug Co. of Apponaug, R. I. He next became general superintendent of the Lyman (S. C.) plant of the Pacific Mills, and in 1927 took charge of the manufacturing departments of Joseph Bancroft & Sons Co.

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A.A.T.C.C. Notes

At a recent meeting of the research committee of the American Association of Textile Chemists and Colorists, Louis A. Olney, chairman, reported the formation of two new sub-committees. One of these sub-committees, headed by William H. Cady, is to investigate the properties and application of printing pastes; the other, headed by Roland E. Derby, is to make a study of wool carbonizing.

The annual outing of the New York Section was held on June 23 at the North Jersey Country Club, Paterson, N. J.

The Piedmont Section held its annual outing on July 1 at the Mayview Manor Hotel, Blowing Rock, N. C.

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Scouring Knit Goods

Results of experiments in scouring knit goods made from wool are reported by S. R. Trotman and H. Horner in one of the recent issues of the *Journal of the Society of Dyers & Colourists.* In the experiments two qualities of knitted fabrics: (1) cross-bred coarse fabric, and (2) botany fabric. The latter had been degreased and washed, the former contained some knitting oil. the samples were soaked in a solution of the oil in petroleum ether, squeezed, and dried. The per cent of oil present was then determined in duplicate by continuous extraction with petroleum ether. The following oils were used: olive oil; medicinal petroleum; and a wool containing equal parts of petroleum and saponifiable oil.

A weighed piece of the fabric was scoured for 30 min. at 120° F. at a definite pH (usually 10.5), washed six times with zeolite softened water at 120° F., and dried. The residual oil was then determined and the per cent of oil removed, calculated. The ratio of liquid to fabric was 30:1. The apparatus used consisted of pint thermos flasks, which were placed in a rotating shaking machine worked by a water motor. The rate of revolution was constant in all experiments and sufficiently slow to allow the contents of the flask to fall to the lower end with each revolution.

The investigators stated that they found that it is difficult to remove mineral oil by means of soap and water, even when assistants are used. The experiments gave the following results: (1) Sodium silicate is the most efficient assistant. (2) No normal scouring process can be relied on to remove more than 96% of the total oil present in knitted wool goods. (3) Mineral oil is more difficult to remove than saponifiable oil. This is due, partly, to the surface tension between the oil and the water, as shown by the ease with which goods treated with mineral oil alone are washed free from the scouring liquor, the latter being unable to wet the fabric efficiently, and, partly, to the affinity of wool for the oil. (4) The presence of a small proportion of saponifiable oil assists the emulsification of mineral oil and, consequently, its removal. This is not the case, however, when a large portion of saponifiable oil is present. (5) The type of fabric affects the result. Loosely knitted cross-bred fabric is much easier to scour than tightly knitted fabrics or botany goods. (6) Increasing the viscosity of the scouring liquor assists the removal of mineral oil. (7) Olive oil soap removes mineral oil rather better than soap with a higher titre. (8) Increasing the volume of soap and water used does not affect the result. (9) While a second or third scour removes a further proportion of oil, some residual oil still remains. This is due to the fact that when a certain proportion of oil has been emulsified, back absorption takes place until a state of equilibrium is established. If oil-free fabric be scoured with soap and water and a little oil, it will contain oil after scouring and washing; i.e., the process is a reversible one.

PROCESSING IN THIS ISSUE

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Finishing Plant News

Putnam (Conn.) Finishing Co. has been organized to take over the business of the French River Finishing Co., Mechanicsville, which was formed last winter.

Lanett Bleachery & Dye Works, West Point, Ga., has begun construction of a new two-story reinforced-concrete and brick addition to mill at Lanett, Ala., approximating 60,000 sq.ft. of floor space, reported to cost $100,000, with equipment. General contract was recently let to the Batson-Cook Co., West Point. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

American Dye Works, Paterson, N. J., is the name under which the former Keystone Piece Dye Works, Inc., is now operating. It is controlled by the management of the Trio Dye Works and the Kapo Dyeing & Print Works. P. Porraro is president of the three firms and Samuel Neslin, general manager.

Western North Carolina Textile Co., Asheville, N. C., is installing machinery for dyeing and printing in a building at 26 Banks Street. Charles N. Malone is sponsoring the project. The concern is capitalized at $20,000.

Greenville (R. I.) Finishing Co. is building a 3-story finishing plant with about 35,000 sq.ft. of floor space. Plans were prepared by C. R. Makepeace & Co., Providence, textile engineers.

The Finishing & Dyeing Textile Co., Inc., has been formed by Sanford Cohen, Harold Ickeringill and Priscilla H. Durfee, all of Providence, R. I., and has taken over the old Braid Mill in South Attleboro, Mass.

Franklin Rayon Corp., Providence, R. I., has awarded to A. F. Smiley Construction Corp., Pawtucket, a contract to erect a 2-story mill addition 45x160 ft. Work on the addition will be completed during July.

Blackstone Dye Works, Inc., has purchased from the Sydney Worsted Co. the plant at Woonsocket, R. I., which the dyeworks has been occupying under lease.

Union Bleachery, Greenville, S. C., has awarded contract to Fiske-Carter Construction Co., of Greenville, for the installation of a reservoir and pipe line costing about $20,000.

Standard-Coosa-Thatcher Co., Chattanooga, Tenn., is planning erection of one-story addition to National mill at Rossville, Ga., to be used for storage and distributing service; the addition will cost $14,000.

QUOTATIONS

At close of business, July 1, 1933.

Prices cover average qualities unless otherwise stated.

Cotton Goods

	July 1	June 1	July 1 1932
PRINT CLOTHS			
27 -in., 64x60, 7.60	4½	4	2⅞
38½-in., 64x60, 5.35	6⅞	5½	3 1/16
39 -in., 68x72, 4.75	7½	6½	3½
39 -in., 72x76, 4.25	8	7½	4
39 -in., 80x80, 4.00	8½	7½	4⅛
BROWN-SHEETING			
36-in., 56x60, 4.00	7	6½	3 9/16
36-in., 48x48, 5.00	5¾	5	4½
37-in., 48x48, 4.00	6⅛	6¼	3½
MISCELLANEOUS			
Drills, 37-in., 3 yd	8½	7½	4½
Denims, 2.20	12½	11½	8½
Tickings, 8 oz.	15½	12	11
Standard prints	6½	6½	6¼

Cotton Waste

Peeler comber	9.50c
Peeler strip	8.50c
White spooler (single)	5.00c

Cotton Prices

Spot Cotton at:	July 1	June 1	For Month High	For Month Low	1932 July 1
New York	10.30	9.25	10.40	9.05	5.75
New Orleans	10.20	9.10	10.29	8.92	5.72
Liverpool	6.45	6.28	6.59	6.16	4.51

FLUCTUATIONS OF FUTURES

	Closed July 1	For Month High	For Month Low	Closed June 1	Net Change
July	10.14	10.30	8.96	9.18	+0.96
Aug	10.15	10.36	9.02	9.24	+0.91
Sept	10.31	10.49	9.11	9.37	+0.94
Oct	10.40	10.58	9.20	9.42	+0.98
Nov	10.47	10.65	9.27	9.48	+0.99
Dec	10.55	10.75	9.35	9.57	+0.98
Jan	10.62	10.83	9.41	9.62	+1.00
Feb	10.68	10.89	9.48	9.71	+0.97
Mar	10.75	10.98	9.56	9.81	+0.94
April	10.83	11.09	9.63	9.88	+0.95
May	10.92	11.12	9.70	....	.....

AVERAGE PRICE JUNE-JULY SHIPMENT HARD WESTERN COTTON

	F.o.b. New England Middling	St. Middling
1⅛-in	12.40c	13.15c
1 3/16-in	15.15c	16.15c
1¼-in	17.90c	20.15c

FOREIGN COTTONS

Alexandria Exchange, July 1		Change
July, Sak	15.10	—0.22
August Uppers	13.13	+0.03
July-Aug. Shipment c.i.f. Boston (Tariff not included)		
Medium Sak	16.00	+0.80
Medium Uppers	14.70	+0.90
(By Anderson, Clayton & Co.)		
India Rough, Calcutta Camilla		9.25c
Peruvian Tangius Strict Middling		22½c
China Tientsin No. 1		9¼c

Prices quoted as of July 1 on this page show further pronounced gains over June 1 in nearly all items. Cotton goods are up about 13% in the month, raw cotton 10%, cotton yarns 20%, raw silk 30%, wool 7 to 12%, tops 12%, worsted yarns 10 to 15% and rayon firm to 12% up.

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.21	20s	$0.24½
10s	– .22	24s	– .26½
12s	– .22½	26s	– .27½
16s	– .23½	30s	– .29½

TWO-PLY SKEINS AND TUBES

8s-2	$0.22	20s-2	$0.25½
10s-2	– .22½	24s-2	– .27
14s-2	– .23½	30s-2	– .30
16s-2	– .24	40s-2	– .35

SINGLE WARPS

10s	$0.22	20s	$0.25½
14s	– .23½	24s	– .27
16s	– .24	30s	– .30

TWO PLY WARPS

8s-2	$0.22½	20s-2	$0.25½
10s-2	– .23	24s-2	– .27½
14s-2	– .24	30s-2	– .30½
16s-2	– .24½	40s-2 ordin.	– .35½

HOSIERY CONES (Frame Spun)

8s	$0.22½	18s	$0.25
10s	– .23	20s	– .25½
12s	– .23½	22s	– .26½
14s	– .24	24s	– .27½
16s	– .24½	26s	– .28½

COMBED PEELER (Average Quality) TWO-PLY—(Knitting Twist) Cones

20s-2	$0.34	50s-2	$0.47
30s-2	– .39	60s-2	– .53½
40s-2	– .44½	80s-2	– .76

WARPS, SKEINS AND CONES TWO-PLY—(Warp Twist)

20s-2	$0.34½	50s-2	$0.48
30s-2	– .39½	60s-2	– .54
36s-2	– .43	70s-2	– .66
40s-2	– .45½	80s-2	– .77

SINGLES

14s	$0.31½	38s	$0.43½
20s	– .34½	40s	– .45½
28s	– .39	50s	– .48
30s	– .39½	60s	– .54

MERCERIZED CONES — (Combed, Ungassed)

40s-2	$0.50	60s-2	$0.65
30s-2	– .55	80s-2	– .89

Raw Silk

Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$2.47	$2.38	$2.38
Special Grand, 85%	2.41	2.30	2.30
Grand XX, 83%	2.34	2.27	2.27
Special Crack, 81%	2.28	2.25	2.25
Crack XX, 78%	2.24	2.22	2.22
Extra Extra, 73%	2.21	2.20	2.20
Best Extra, 68%	2.15	....	....

RAW SILK EXCHANGE

	July 1	June 1	For Month High	For Month Low	Net Change
July	2.14	1.64	2.17	1.64	+0.50
August	2.08	1.63	2.10	1.63	+0.45
September	2.08	1.63	2.10	1.63	+0.45
October	2.08	1.63	2.11	1.63	+0.45
November	2.08	1.64	2.11	1.64	+0.44
December	2.08	1.63	2.12	1.63	+0.45
January	2.08	1.64	2.11	1.64	+0.44
February	2.08	....	....	....	.....

Silk Yarns

Hosiery tram 5thd, Japan, 85%	$3.05
Hosiery tram, crack XX, 78%	2.85
60/2 spun silk	2.65

RAYON WASTE

Thread	$0.13-0.15

Wool

OHIO, PENNSYLVANIA, ETC. (GREASE)

Fine delne.	$0.29 –$0.30	¾ blood	$0.33 –$0.34
Fine clthg.	.23 – .24	¼ blood,	.32 – .33
½ blood	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN)

Texas, 12 months	$0.68 –$0.70
California, Northern	.65 – .66

MONTANA, IDAHO, WYOMING (CLEAN)

Staple fine	$0.71 –$0.73
Staple ½ bld	.70 – .71
Fine and fine medium (original bag)	.69 – .70
¾ blood	.64 – .65
¼ blood	.61 – .62

EASTERN SCOURED PULLINGS

A.A	$0.74 –$0.75	B-Super	$0.64 –$0.68
A-Super	.68 – .70	C-Super	.60 – .62

CARPET WOOL (Nominal)

Aleppo (clean)	$0.19½–$0.20
Sining	.13½– .14½
China filling (clean)	.16 – .18

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$1.00 –$1.02
Half-blood (60-62s)	.97 – .98
Aver. ¾ blood (56s)	.87 – .89
¼ blood (50s)	.81 – .83

NEW YORK TOP FUTURES

	Closed July 1	For Month High	For Month Low	Closed June 1
July	91.00	92.00	81.00	81.00
August	91.20	92.00	81.20	81.20
September	91.50	92.40	81.40	81.40
December	92.40	93.00	81.80	81.80
January	92.50	93.00	82.00	82.00

TOPS—BRADFORD, ENG. (July 1)

Fine (64s)	29d	¾ bld. (56s)	20d
½ bld. (60s)	27d	¼ bld. (50s)	14d

NOILS—BOSTON

Fine	$0.52 –$0.53	¾ bld	$0.42 –$0.45
Half-bld	.47 – .49	¼ bld	.38 – .41

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 44s	$0.95 –$1.00	2-36s 58s	$1.25 –$1.30
2-30s 46s	1.05 – 1.10	2-40s 60s	1.30 – 1.35
2-30s mixes	1.45 – 1.50	2-50s 64s	1.50 – 1.60

ENGLISH SYSTEM KNITTING

2-20s 44s	$0.97½–$1.00	2-20s 60s	$1.20 –$1.25
2-20s 50s	1.05 – 1.10	2-20s 64s	1.30 – 1.35

FRENCH SYSTEM

1-26s 64s	$1.25 –$1.30	2-40s 64s	
1-30s 64s warp	1.30 – 1.40	Zephyrs	$1.45 –$1.50
		2-50s 66s	1.55 – 1.60

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	Price	Denier	Filament	Price
50	14	$1.20	150	24–40	$0.65
75	30	.97	150	60	.70
100	40	.82	300	44	.55
125	36	.70			

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Denier	First Qual.
75	$1.02 –$1.07	150	$0.70
100	.82 – .92	175	.70

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.15 –$1.20	100	$1.00 –$1.05
60	–1.05	120–125	.95 –1.00
75	1.05 – 1.10	150	.90 – .95

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
30	24	$1.45	100	75	$0.85
75	60	1.05	150	112	.75